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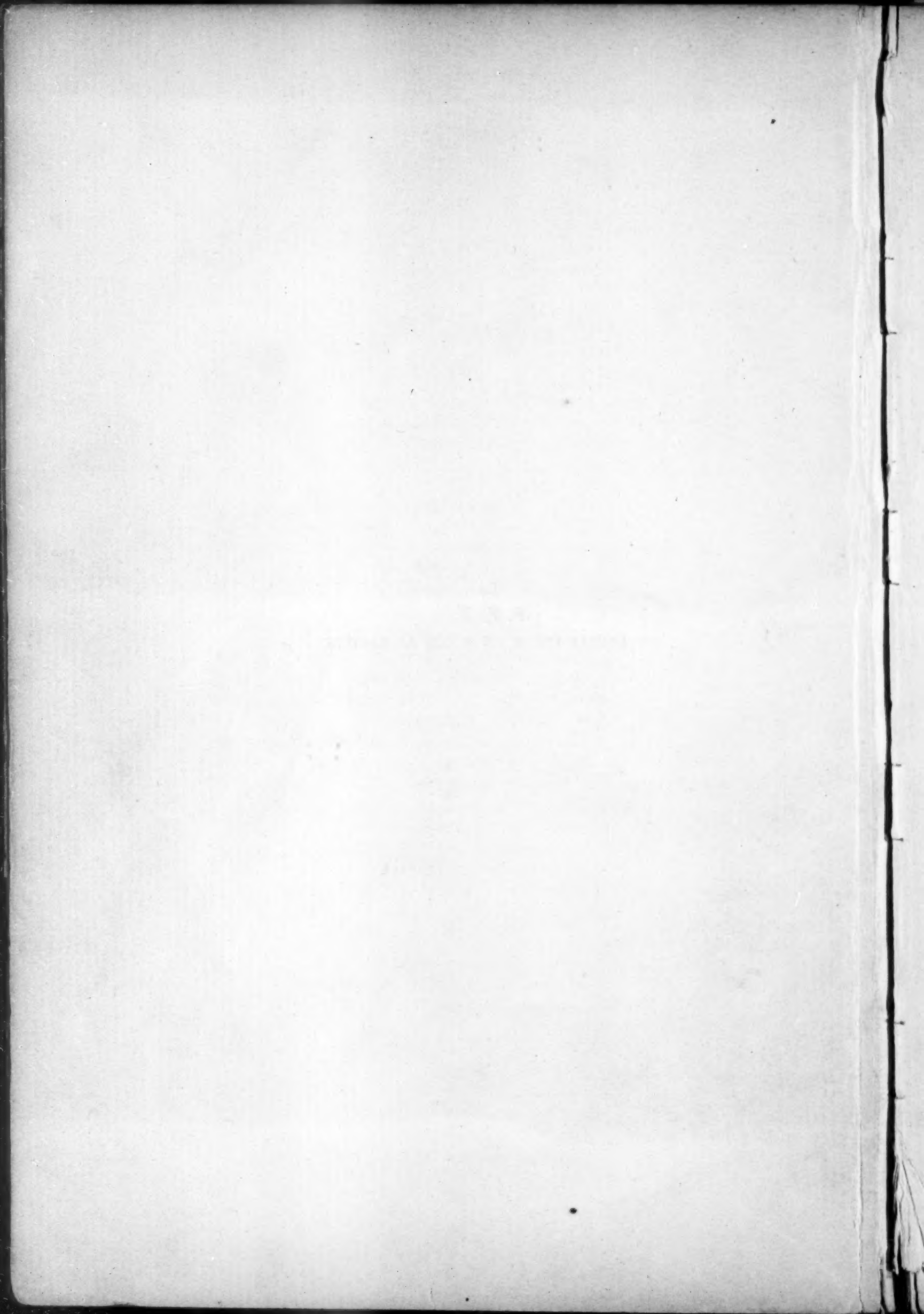
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To
F. E. F.

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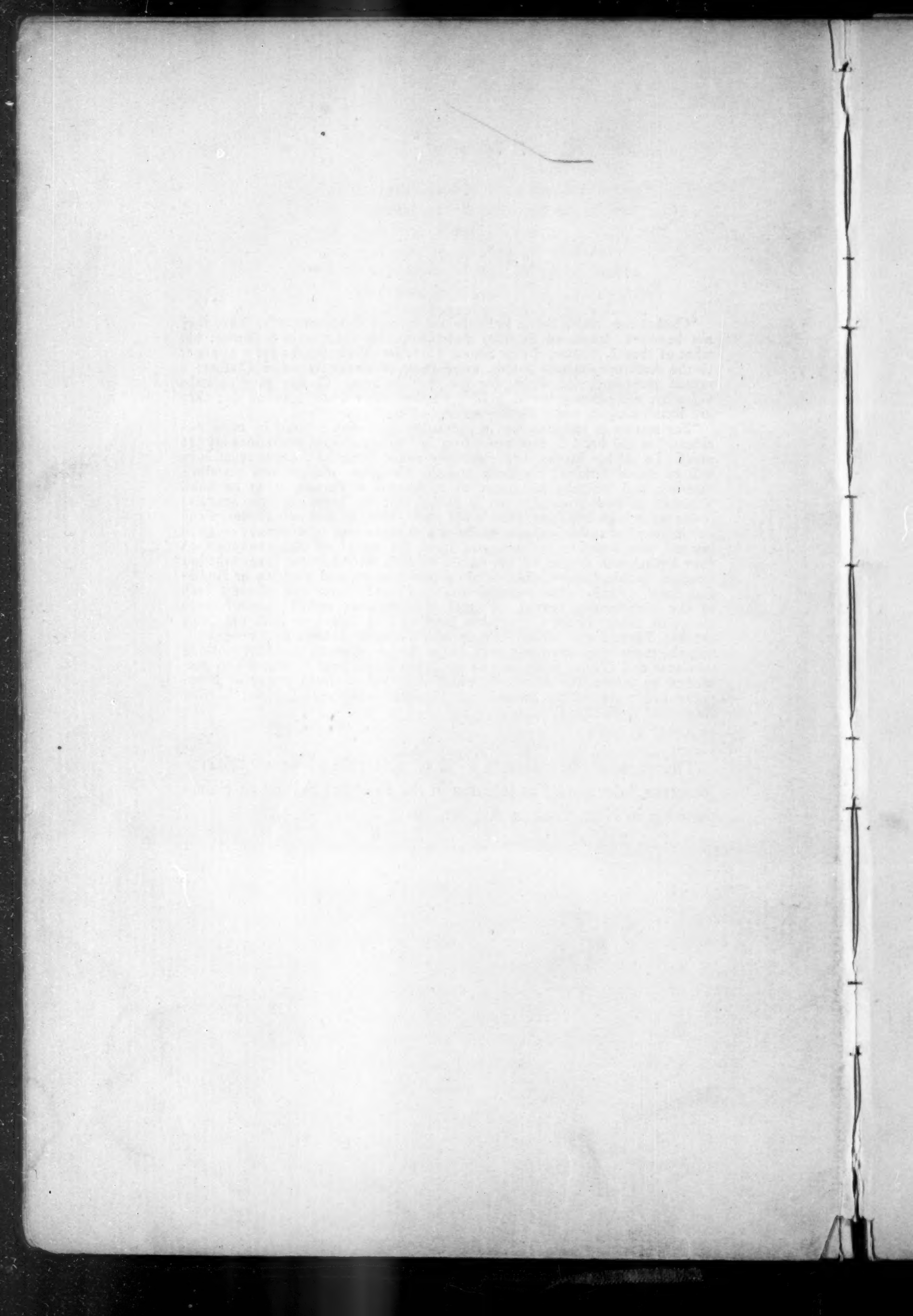
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"Clothes too, which began in foolishness love of Ornament, what have they not become! Increased Security and pleasurable Heat soon followed: but what of these? Shame, divine Shame (*Schaam*, Modesty), as yet a stranger to the Anthropophagous bosom, arose there mysteriously under Clothes; a mystic grove-encircled shrine for the Holy in man. Clothes gave us individuality, distinctions, social polity; Clothes have made men of us; they are threatening to make Clothes-screens of us."

"For neither in tailoring nor in legislating does man proceed by mere Accident, but the hand is ever guided on by the mysterious operations of the mind. In all his Modes, and habilitory endeavours, an Architectural Idea will be found lurking; his Body and the Cloth are the site and materials whereon and whereby his beautiful edifice, of a Person, is to be built. Whether he flow gracefully out in folded mantles, based on light sandals; tower up in high headgear, from amid peaks, spangles and bell-girdles; swell out in starched ruffs, buckram stuffings, and monstrous tuberosities; or girth himself into separate sections, and front the world an Agglomeration of four limbs,—will depend on the nature of such Architectural Idea: whether Grecian, Gothic, Later-Gothic, or altogether modern, and Parisian or Anglo-Dandiacal. Again, what meaning lies in Color! From the soberest drab to the high-flaming scarlet, spiritual idiosyncracies unfold themselves in choice of Color: if the Cut betoken Intellect and Talent, so does the Color betoken Temper and Heart. In all which, among nations as among individuals, there is an incessant, indubitable though infinitely complex working of Cause and Effect: every snip of the Scissors has been regulated and prescribed by ever-active influences, which doubtless to Intelligences of a superior order are neither invisible nor illegible." (Thomas Carlyle: "*Sartor Resartus*," I, V, 1830.)

The present discussion, a kind of scientific ghost of "*Sartor Resartus*," developed as lectures in the Fruhauf School of Salesmanship in New York in August, 1917.



I. INTRODUCTION

The science of clothing so far has never been developed; it is something new, almost pioneer scientific work. The personal science of clothes and of being clothed, then, is the topic on which I would suggest a few considerations from a somewhat technical point of view.

It includes, as I shall consider it, two phases, first, a physiological psychology of clothing, and then the beginnings of the applied psychology of clothing. These complement each other. All this is a new application of psychology (the general science of how to live), and one of which the great public is much in real need. The public, to be sure, does not realize this need, any more than it knew that it was in pressing need of information on diet or on sex or on other things. The public does need basic scientific information on how to clothe themselves properly so that they will be both more efficient and more happy, because continually more comfortable.

1. *The Satisfaction-Efficiency Ratio.*—Underlying this whole matter of the physiology and the psychology of clothing is an ancient idea which is of fundamental importance throughout the whole matter. In the lectures to my students I give it the technical name of the sthen-euphoric index or ratio,—but we won't worry about the name. Sthen and euphor are two Greek terms; sthen stands for strength or energy, and euphor for well-bearing, contentment, well-being, happiness; while ratio, of course, or "index," is the relationship between the other two. The old and simple-enough idea then, is, to put it wholly outside of scientific terms, that one expends more energy and is therefore more efficient in many ways when he is contented and happy, using the word happy as a symbol for the broad translation of the general Greek term euphoria. When a person is satisfied, contented, in good humor, when he is "happy," in short, he expends more energy, has more initiative, and is altogether more efficient than when he is unhappy, worrying about something, or when he

“has a grouch,” or any other of the conditions opposite to happiness. *Freedom from discomfort* underlies it. It importantly underlies the psychology of clothing in particular, without any doubt at all, because personal comfort is absolutely essential “in the long run” to a high-grade of efficiency in the long life-run. This is not so much true of an Eastport man for example feeding sheets of tin to a sardine-box stamping machine, but it is true of any kind of work which involves the optimum action of the “higher” and freer phases of the mind and skilled body. Comfort in general is indispensable to ideal behaviour that is at all free.

Comfort has both a physiological and a psychological aspect; but both aspects underlie efficiency in a way which is measurable even in dollars and cents. The factory-managers, as you already are aware, not many years ago started out to prompt their employees and operatives to maintain better health, to keep them in better “condition”; finding that it was a “good policy,” even as income was concerned, to go so far as to hire a “doctor” at two or three thousand a year to help keep the employees well.

The next inevitable step will be to apply exactly the same principle to keeping them personally contented and “happy.” That’s the next economic step, and a friend of mine at Harvard and myself hope to make some observations after the war, on that matter, with the intent to see if a child in school who is “happy” does not do better learning-work than one who is uncomfortable or unhappy; to see, too, if a girl working in a paper-box factory does not make more boxes in the course of a week when she is “happy” than she makes when she is wretched, unhappy, discontented.

There is a scientific basis underlying this notion that happiness is related to a large expenditure of energy and to a high mental efficiency; and the higher the grade of the activity, the freer the mental work, the truer it certainly is. The fine-artists have been showing us that all along. Poets, musicians, painters, sculptors often refuse to work when they “don’t feel like work,” and they have always found by experience that only thus can they make their highest grade of achievement.

I say comfort then is a matter both of passing life-enjoyment and of dollars and cents,—and the latter is perhaps the best, because the ultimate, materialistic index and way of suggesting the practical phases of the subject. The two are interdependent very intimately, and related “in the long run” so that they cannot be separated.

2. *A General Public Need*

The present discussion concerns first the physiological psychology of clothes. My approach in this knowledge is mostly that of pure science from the universities and from the psychological and physiological laboratories, although no actual researches that I am able to hear of have as yet been done in a scientific laboratory on the psychology of clothing. There have been some questionary observations made, (at Clark and, I have heard, at Columbia), they have asked young people questions, but no psychological laboratory, so far as I am aware, has ever taken up the widely interesting matter experimentally. It is a matter of some difficulty, and much expense and apparatus. (A university professor wrote me recently that he had been intending for some years to attack the problem, but that the difficulty of it and his lack of time had so far kept him from it.)

I offer you the scientific base-facts so far as I can get them, to be used as you please, hoping some time to be able to start in one way or another some actual relevant psychological experiments. It is a matter that can be experimented on and reduced to more or less exact figures, so that the conclusions are certain, rather than vaguer corollaries from certain scientific principles.

If ten per cent be a moderate estimate of the present inefficiency arising from maladapted clothing, it is obvious that adequate endowment for the scientific study of human raiment is a public need,—a need not as yet widely realized, perhaps because never before scientifically defined. We shall do at least that much!

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II. PHYSIOLOGIC PSYCHOLOGY

There is much more physiology in the science of adequate clothing as a process than most men, even the physiologists, would at first suspect. And yet it is obvious, on thought for a moment, that any covering as heavy, as complete, and as relatively rigid as an average suit of clothes or a proper gown could not help having multiform influences within and without over the body which wears it. Because so universal and so continuous, these influences are of noteworthy scientific and practical importance.

The reason in a nutshell for this is that one's clothes are one of the important things that intervenes between the individual personality and his environment, and you understand that life itself in a sense is a reaction of an individual to his environment. As Webb puts it, "As a matter of fact, our artificial coverings have become so much a part of our life that one may perhaps be allowed to apply the methods of the naturalist to their consideration, and deal with them as if they were part and parcel of the creature which wears them"—as pragmatically they are. We might almost consider clothes as a vicarious or artificial skin, almost an extension of the individual's boundary, involving important relationships between the person and his environment, spiritual as much as material. And that is the reason, the deeply fundamental reason, why there is so much real science in the physiology and the psychology of clothing, subjective and objective, personally and socially and industrially.

Let us take up first then the discussion of the physiological psychology of clothes in three groups of relations: 1, to the skin; 2, to bodily action or behavior; and 3, to body-temperature.

Since the centuries,—those slow, groping, aspiring centuries!—when manhood and womanhood were new and our preprogenitors were covered with a fairly thick mantle of hair, the human animal man has been a naturally *naked* creature. He naturally is so, still. For a reason none too easily apprehended, there seems

to us something ludicrous in this nakedness of the naïve savage. Thomas Hood the Younger, for example, almost blushes as he tells us

"And their principle clothes were a ring through the nose
And a patch of red paint on the forehead,"

while other poetasters less known to fame than Thomas Hood, and escaped missionaries and cartoonists innumerable have almost vied with each other in expressing in memorable phrases the insistent natural nakedness, always adorned, of natural man. This interesting and important negative phase of our subject we must for the present all but ignore.

The human animal is naturally, if you please, then, and normally a naked animal, and up to within about three hundred years ago people were allowed to live in corners of Europe, specially in Ireland and in Germany (Rudeck), naked. Up to three centuries ago, at least, the nakedness of the primeval man had not become so entirely "immodest" that it was prohibited by enforced law. Man is naturally a naked animal, and it takes a very long time indeed to adapt an organism to artificial, "acquired" new conditions. Furless and with little hair was primeval man; and he still likes to be so.

In clothing him, therefore, one has to respect and not ignore this natural nakedness; and especially the basal fact that man gets his highest comfort when naturally warm environmental air is freely playing over and on his skin. You all know, of course, the delight of exposure to the breeze, and to warm showers, and to other conditions of the natural environment, when you are naked.

Now, this basic principle of the physiology of clothes, (that man is constructed for efficiency-with-happiness, primally as a *naked* animal) requires that he be rather careful in adapting ideal clothing to his requirements, because man, after all, is a highly sensitive being. His efficiency is an intricate and a rather susceptible thing, and has to be catered to, if he is to get the most out of his few and flying years.

1. *Relations of Clothing to the Skin.*

I have briefly described in my Text-Book of Human Physiology, (pp. 312-326) published ten years ago, nine functions of the skin. I am not going greatly to bore you with these nine functions, because they are too physiologically technical, but there are some of these nine functions which are important for our particular purpose in studying the science of being clothed. The nine are: protection; the regulation of body temperature; sensation of various kinds; the excretion of sweat; the secretion of sebum, (which is the oil of the skin and hair); respiration; the absorption of certain things; coloration of the skin, (which add to the individual's beauty and protect him from undue light), and, technically, support of the hairs and nails.

A. *Protection* of the body by the skin is served largely by the outer portion termed the epidermis. It is 0.1 millimeter in thickness and consists of many layers of stratified epithelium, the outermost of which, called the stratum corneum, consists of horny, non-nucleated squames, the layers nearest the surface being practically dead and dry. As the lower layers of the epidermis develop, the outer layers are shed by maceration in bathing and by friction. This highly fabricated structure of the outer portion of the skin is one eminently adapted to protection of the highly sensitive body, beneath it in at least the following respects:

(a) It is a bad conductor of heat; (b) It is mobile on the tissues beneath it and so a minimizer of friction from a more or less harmful environment. (c) It is free of nerves, and so insensitive in itself. (d) It is flexible and yet hard and resistant because made up of scales. (e) It is extensible and so readily adaptable to the temporary variations in the size of parts beneath it. (f) The skin is in many places a soft and elastic pad, thus preventing irritating jars (e.g., on the heel). (g) For the same reason it often prevents pressure on delicate parts beneath. (h) Because dead, the epidermis prevents parts (e.g., the toes) from growing together. (i) The skin by its oiliness prevents undue maceration of the body when in water and very moist air. (j) The epidermis dry is an excellent non-conductor of electricity. (k) Its keratinous composition makes it resistant to many chemicals.

B. *Excretion of Sweat* is, next to protection, the skin's most important function. Sweat is a clear liquid of a specific gravity

of 1004, either alkaline or acid in reaction. Average daily amount is about fifteen hundred cubic centimeters, it being evaporated continually into the atmosphere. Sweat when visible is termed "sensible," when invisible "insensible" perspiration, the latter being by far the more important.

The composition of sweat has been determined variously, 1.2 per cent is solid, and of this, three-quarters are "organic" including neutral fats, cholesterin, fatty acids, proteid, 0.1 per cent of urea, pigment, sodium and potassium chloride, phosphates, uric acid, skatol, phenol, creatinin, carbon dioxide, and a little nitrogen.

The secretion of sweat is determined by: a, Temperature of environment; b, Activity of heart; c, Vascular tone; d, Muscular activity; e, Fluidity of blood; f, Relative activity of kidneys and rectum; g, Ingestion of certain drugs; h, Nervous system.

The sweat-centers seem to be located in the medulla oblongata, with subsidiary centers up and down the cord, perhaps.

The chief function of sweat is to excrete half the ingested water, thus controlling body-heat to a large extent, evaporation and radiation being, of course, cooling processes. Soluble salts, especially urea, are also excreted by the skin, often in visible amounts.

C. *Secretion of Sebum* is the work of a set of glands in the skin, the sebaceous glands. Their ducts empty into the hair-follicles. The cerumen or wax of the external ear, and the secretion of the Meibomian glands on the eyelids' edges are both modified sebum, whose uses are obvious; and there are others.

The *function of sebum* is to soften with its fats the epidermis and hairs and to keep the skin impervious to water.

D. *Regulation of the body-temperature*, (to a considerable extent) is brought about by the skin through its position at the periphery of the body, where loss of heat by radiation conduction, and by evaporation of water, would naturally take place. Four conditions at least, control the storage and loss of body-heat so far as the skin is concerned:

(a) The amount of blood passing through the dermal capillaries helps to determine the amount of heat-loss because the loss takes place by radiation and conduction of the heat brought from within the blood, and by the evaporation of the sweat, dependent largely on the dermal blood-flow. Hence.

(b) The amount of sweat excreted has much to do with heat-loss (thermolysis) and heat storage, evaporation being greater when sweat is greater in amount.

(c) The relative oiliness of the skin determines to some ex-

tent heat-loss, because an oily skin is very much better conductor of heat than is a dry skin. Radiation and conduction of heat would be greater when the skin is secreting much sebum.

(d) The humidity and temperature of the atmosphere are important factors in thermolysis and heat-storage, for radiation and conduction would be greater on a cold, damp day, than on a dry, warm day. Evaporation, on the other hand, would of course, be less on the damp, cold day, while on the dry, cold days, other combinations would obtain between radiation and evaporation. Thus in the dermal capillary circulation and in the sweat-glands there is a possible means of great delicacy and adaptability of regulating body heat. How elaborate the actual mechanism may be, we do not know.

E. *Respiration*, is conducted by the skin, but on a very small scale, only a few grams of oxygen passing into the blood and a few grams of carbonic dioxide passing thence into the air, in twenty-four hours. The dermal respiration is certainly not one per cent of that through the lungs, but is more prominent when the lungs fail to do their work, a "vicarious function."

F. *Sensation* is certainly a very important function of the skin, for thereby only to a large extent can the animal adapt itself to its complex and everchanging environment.

The skin is the site of neural end-organs of (a) touch, (b) pressure, (c) heat, (b) cold, and probably also of (e) pain, and of (f) pleasure, with a possibility rather remote that (g) tickle, (h) moisture and (i) electricity are also made known to us through dermal sense-organs. Considering the complexity of our minds, the presumption always is in favor of a greater variety of sense-organs than we now can positively describe, although a dozen are now known.

G. *Absorption* through the skin is slight save of fatty substances when placed upon it or rubbed into it, and of such substances as may be actually dissolved in this fat. We have seen above that a little oxygen and carbonic dioxide also pass in and out through the skin. Water apparently does not to any great extent.

H. *Coloration* in the human animal is useful in giving beauty to the body, thus adding a factor to sexual selection. In some of the lower animals, e.g., fishes, frogs, and insects, great protection from devouring enemies is afforded by the adapted deposition of pigment so the better imitating the animal's environment. Pigment protects against too much light: tan and freckles.

I. *Support of the hairs*, etc., which grow in nearly all parts of the body, is the last of the dermal functions we mention. The

support is both mechanical and chemical, for the skin furnishes oil and moisture to the hairs. Explanation of the presence of the hair in man must be sought in evolution, partly as a survival of the necessary protection from cold in case of the brutes, the growth on the head, and on the face in men, serving the same function for humanity. Their esthetic value also should not be overlooked. The lanugo hairs scattered over most parts of the body are the most sensitive of all organs of touch, each having about it within its sheath a ring (Bonnet's) of nerve-fibrils. This may be considered as their most important function, but they help to protect the brain.

The *nails* also are dermal appendages of quite essential value in human behavior.

Of these nine dermal functions, protection, the regulation of body-temperature, the sensations of various kinds,* sweat-evaporation, and breathing are five which have fundamental relations to the science of clothing.

A, Let us consider first that *the clothes must not irritate the skin*,—briefly statable, but of quite primary importance. There are sense organs everywhere in the skin in multitudes, and obviously clothes which irritate, (a scratchy linen collar, for example, or a coat-collar which comes habitually against the back of the neck, poisonous hosiery-dye, or a projecting heel-nail), is an extreme cause of irritation not only to the skin, but through the integrating nervous system to the entire individual.

B, *Breathing must be allowed* by the clothes. Only about half of one per cent of the respiratory exchange really goes on through the human skin. We are not like frogs, which breathe half through their integument and so satisfactorily that they can spend a winter buried deep in the mud at the bottom of a pond, of course meanwhile living perfectly well because they can breathe adequately through the efficient moist skin. It isn't then that the human integument in itself is an important organ of respiration; but it is that it serves importantly as the receptor reflexion-organ, probably, for the control of the respiratory movements in, and possibly of, the lungs. The physiologist Bohr (unfortunately he recently died, and before he had a chance to

* See Smith Ely Jelliffe: "The Dermal and the General Sensations" in Moffat, Yard & Co's. *Our Senses Series*, to be continued after the war.

demonstrate) worked out the very probable concern of the skin in the ventilation of the lungs. It is important, then, that the skin by being wrongly clothed should not be deprived of part of its natural function of somewhat regulating the respiratory process, so that this reflexion is prevented, and the important friction of air, and even of the cloth on the skin thwarted by clothes generally too tight or too impervious or both.

The present writer already had made some suggestions in this line in the *Psychological Review* of May, 1914. We may repeat two paragraphs:

The second process (the first is sweating) which appears to actuate dermal receptors so as to effect an euphoric tone in the individual's consciousness (not to say in his subconsciousness) is oxidation, one of metabolism's foundation-stones. Experiments done long ago seemed to show that so far as the body's respiration is concerned only about 0.5 per cent occurs directly through the skin. But this small fraction shows that oxidative processes do occur in the skin. When one considers the minuteness of the various dermal receptors and their possibilities of actuation by the "circumambient air," together with physiologic data immediately to be noted, the reasonableness of supposing dermal oxidation to be a factor of euphoria is readily admitted. Bohr showed that ventilation of the blood in the lungs is probably a reflex process of active secretion by the alveolar epithelium. Y. Henderson on the other hand, while admitting the oxidative secretion, supposes that the depression of "mugginess" comes from the kolionic inhibition of this secretion in the lungs. The receptors of this reflex oxidation, it is possible or rather more, are in the skin, and may be found to be one of the varieties of end-organ mentioned considerably above. Graham Lusk showed by experiments in which men were emersed in water at 10° C. for from seven or eight to twelve minutes that the metabolism increased 181 per cent.—and respiration is always the metabolic index. The experimenter ascribed the increase to the men's shivering, but it seems possible at least in the light of Bohr's work that the increased activity of alveolar secretion of oxygen into the blood may have something to do with the heightened oxidation.

This supposition seems strengthened by late work of Max Verworn which demonstrates, among other important things, the immediate dependence of the action of the nervous system on oxygen,—an extension of his much earlier proof that ameba stops flowing in about an hour when oxygen is removed from its environment. Without ideal speculation as to the affective tones of ameba (!), it is fairly rational to presume that some or all of the delicately complex receptors in the human skin, close to the air as they are, may have their activity and their consequent streams of neurokinesis increased by exposure to moving air as contrasted with air that is dead. It is my present hypothesis, then, that moving air in some way has a tonic action on the afferent influences from the skin by stimulation of whichever receptors in that very complex receptive field are tuned to this mode of energy. The mere presence of oxygen is not enough for a normal euphoria—it actuates, perhaps by way of the pulmonary epithelium, only when coming as a moving force (with friction perhaps) against or over the skin. If, however, friction be really an element in dermal cenesthesia, it is probably not the gross mechanic friction one is apt to think of first, but rather a subtle sort of physiologic friction, so to say, adapted to the extreme delicacy of the organic instruments so abundant in the human skin. On the other hand, the mysterious highly euphoric stimulation of a gale of wind when not outside the optimum range of temperature (as in the splendid Nova Scotian summerland in September) is known to all, and this implies that gross friction, friction in the ordinary physical sense of the term, may be also a factor in the experienced product. Massage and the caress seem to possibly imply the same thing.

This is part of the psychophysiology of the future, these complex but all-important recondite functions of the skin. At the present time, it is plain that the skin is *an organ* proper, with its own work of great importance to do; but it is equally plain that the skin of man is also a highly intricate and all-important *receptive field*, with receptors that serve to relate the individual with his always complex effective environment. Respiration seems likely to prove part of this wide integration of vital functions.

The euphoric, or comfort-, factors of the skin, set forth already in the article from which we have just repeated, we may not take space further to discuss. But it must be noted that they are *important* both for efficiency and in themselves; and that clothing is a closely related theme for applied science to study.

It is close at hand that one's clothing must be fabricated on the general principles which are of importance in all of these recondite dermal and organic affairs. But here we may only hint at some of the most obvious conditions.

Here comes in first, of course, texture, whether open or tight. A free movement of the air on the skin is of fundamental importance. Or this may be secured by a general looseness of the clothing. Our wiser English cousins have practiced this for long. It appeals to me scientifically as well as personally very strongly that clothing both hygienically and for comfort should be *loose*, and thus allow of a slight circulation of air, so to say, off and on, underneath it over the body clad beneath in our intricate and sensitive skin.

C, Various kinds of *protection* are served by our clothing; clothes protect us from many different kinds of things. I am going to spend some time later on going into some of the details of the psychological protection; but there are sundry physiological protections offered by raiment that we may mention now. From cold, for example; on the other hand, the day-laborer digging trenches in the street in over-hot weather knows by hearsay and by experience that two or three thick woolen undershirts then will keep him cool as well as they will keep him warm in winter, in July keeping the heat out as in January this clothing will keep it in.

Proper clothes protect the person from sunburn too; from some insects; from various mechanical impacts. And, more important by far than these mechanical influences, clothes afford protection from various mental things, which I will make a business of suggesting and briefly discussing in the third section of the monograph.

On a very rough estimate, every adult evaporates probably at least five liters of sweat during each sultry summer day. I have

in my notes a scientific report of hand blowers in a glass-factory who averaged a daily excretion of twenty-three pints of sweat, and work would have been impossible quite without the cooling produced by this ample vicarious evaporation. One can see that the sweating-process is a very important one, and hence one not to be impeded by inadequate clothes, day or night.

2, *Relations to Bodily Action.* The second general habilitory notion that I would suggest, is the need of freedom for bodily action. As we shall see, this is not only related to the actual material movements of the body itself, but underlies also the higher efficiency of the mind as well as of the body,—the two indeed being aspects of one thing, the actual living personality; of us, in short, who wear the clothes.

One of the things that has been quite ignored in thinking of clothes-comfort and hygiene is the set of sensations of the interior of the body ("coenesthesia") and of the muscles, tendons, and the joints, technically called kinesthesia, ("the feeling of movement"), but, more commonly, still termed the muscle-joint sense. The viscera, the muscles, the tendons, the joints, the skin, and the bones are continually giving to the brain and into the mind a multitude of sensations that represent the various strains and the various movements and restraints of each of the parts of the body.*

In the science of clothing these coenesthetic and *kinesthetic* data are of preëminent importance. Unless these movements are unrestrained and free, unless these conscious and subconscious sensations are kept from being restricted and therefore made unpleasant, the individual is not comfortable and cannot be fully efficient or consciously "happy," but there is a more or less conscious lack of freedom and of satisfaction. The naturally naked man feels none of this unpleasant restraint.

If clothing fits, it interferes little with our life-activities, and "fit" means fit the one particular body that it is made or intended for. Everybody and also the actions of everybody are characteristically different from those of every other body. Each individual is unique, has a personality of his own. Please ob-

* See the volume on these sensations, on the sense of "feeling," in the "Our Senses Series," already cited.

serve that he has not only a body of his own, not only a material body to be fitted with clothing, but a group of actions to be fitted. It is my small experience that the average tailor pays far too little attention to the fittable body in its action-aspect. A really well-fitting suit of clothes or a gown fits the body as that particular body actually *works* in the course of a day and night. It doesn't fit it as it is quietly standing up on a stool, but fits it as the habitual continual movements of that particular individual require it to be fitted.

Fit involves at least five kinds of freedom, freedom of the body primarily, but in both its reflex and voluntary aspects.

A, Digestive actions. The relations of clothes to the digestive organs is obvious to many people about or after middle life, (thirty-five) but seldom are noticed by those who are younger. The stomach and the transverse colon, it must be remembered, are conspicuous in front just above the top of a man's trousers and about the middle part of his waistcoat, vest. When the stomach is tender from neuritis, ulcer, mild inflammation or worse, or when the transverse colon, as it often is, grossly overloaded, it is obvious that clothing too tight around this region would have a very disturbing, although at first often subconscious, influence on the person's general comfort. Often too, as we know now better and better, very frequently the stomach is dilated from habitual distension from too fast and over-eating, and this adds a similar, but more acute element, to this disturbing influence at the waist. It is very likely that man's curious but confirmed habit of standing on his hind legs has much to do with the etiology of ptosis of the stomach,—as surely it has to do with his clothing.

B, Breathing movements. It need not be pointed out in this place that practically the entire body is disturbed or very actively concerned in even the ordinary movements of respiration. The abdominal influences affect the entire abdomen, the abdominal walls being pushed forward and sidewise, and all the viscera more or less displaced. Many of the muscles of the abdominal wall and of the thorax are actively concerned in the process of expiration, especially.

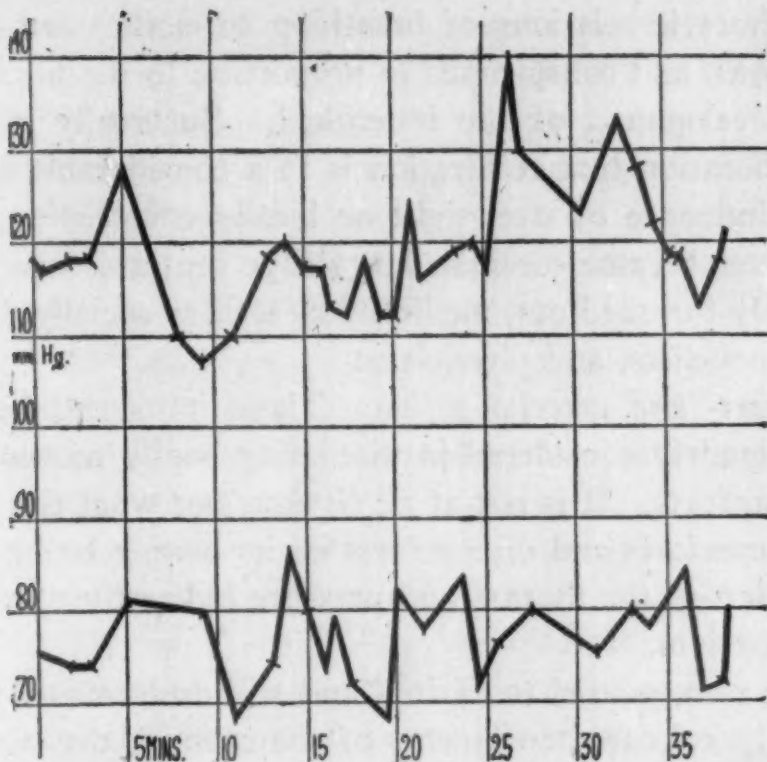


FIG. 1.—Hemobarogram B² 14. (Each square on the horizontal (abscissa) line represents five minutes of time; and each square on the vertical (ordinate) line means ten millimeters-of-mercury of pressure in the brachial artery as it is commonly measured at present with the cuff-sphygmomanometer,—in reality “too high.” The upper graph is the systolic series of pressures, the lower the diastolic; the space between them represents the pulse-pressure at any moment. This blood-pressure record then is 38.5 mins. long, with 33 systolic measurements and 26 diastolic, the extremes being 140 mm. Hg and 68 mm. The diastolic was measured in this case by the old-fashioned “third-phase” criterion, now abandoned for the more certain criterion of “sounds gone.” These graphs of course are to be read from left to right.)

Three rapid rises of arterial tension are shown in this hemobarogram, each involving (as sometimes does not happen) both the systolic and the diastolic phases. The first begins in the fourth minute from recalling a bad fire-scare years before; the second begins in the nineteenth minute from a slight feeling of recalled embarrassment; and the third in minute twenty-five from “heat and anger” recalled. (In the thirty-first minute is shown the brachial rise incident to multiplying 98 by 76 “mentally.”)

The subject was a young-woman teacher (26.5 yrs.) in the Harvard Summer School, 1916. 11 a.m. Heartrate at the beginning 74, twelve minutes later 76, nineteen minutes later 78, and at the close 85.

Here, then, is the rise of blood-pressure developed as the result of disagreeable stimuli, a feeling of unpleasantness. Note the marked rise—a maximum of about twenty-three millimeters of mercury, twenty-three points—in the course of two minutes from the “mere” recall of some unpleasantness. It doubtless happens exactly like this and more lastingly from the mental or bodily irritation of a badly fitting gown or suit of clothes. Data are not yet at hand which would show the nature and degree of the chronic influence of persisting unpleasant conditions, save when they are on the verge of being pathological, when the rise-results are conspicuous enough.

The thoracic relations of breathing to clothes are still more conspicuous, and conspicuous in proportion to the normal, "athletic," development of the individual. But really it does not need elaboration that respiration is to a considerable extent under the influence of over-tight or locally constricting clothing. This matter became common knowledge centuries ago, and was thoroughly threshed out, medically as well as socially, by society women, novelists, and physicians.


C, Heart- and arterial action. These influences have never been adequately considered in discussing bodily movements and bodily comforts. It is not at all obvious but what the heart has (vagal) comforts and discomforts all its own, relating to direct compression of the thorax, and pressure indirectly upward from the epigastrium.

Young women used to "faint" and still do now and then, and the mechanical cardiac elements of the complex are not known; they may be of consequence. Their abdomens, at least, often were so tightly compressed that their viscera were pressed upward and there interfered with the free action of the heart. The first thing one does ordinarily when a woman "faints away" is to loosen her clothing around the abdomen and chest, and so give her heart a chance to beat normally again.

What we are especially concerned with at the present time, however, wholly new so far as I know, is the arterial tension, the blood-pressure, not only of the *skin* immediately compressed by clothes, but on the two principles of "*liquid*" transmission and of *reciprocity*, the arterial tension of the entire body, muscular, cerebral, and visceral.

My research-interests for some two or three years, have been quite a bit on blood-pressure, and I present some blood-pressure records (hemobarograms), made by my new quasi-"continuous" method, which illustrate very interestingly some of the conditions connected with clothes in regard to arterial tension. These graphs have not been prepared for this present purpose at all, but I think you will find them *à propos* of our present work and very suggestive as well as interesting.

The *capillary* and *venous* relations between clothes and over-



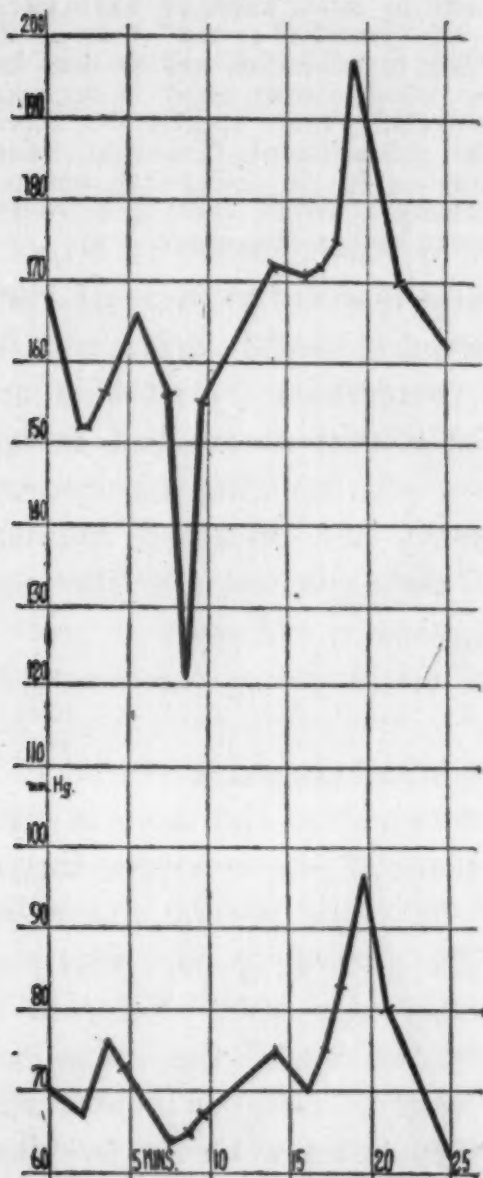


FIG. 2.—Hemobarogram (part) A 19. This graph represents twenty-five minutes out of a hemobarogram just two hours long made from a medical man who is an athlete and self-trained in various kinds of physiologic "stunts." The extreme arterio-tensional ranges measured during the two hours of that September, 1916, afternoon were: systolic, 74 mm. Hg, maximum, 196; diastolic, 35 mm., minimum 61 mm., sounds-gone method. (The plotted hemobarogram entire is 620 by 365 mm. in size.) The subject all the while sat quietly in his chair, be it remembered.

The systolic fall beginning in the eighth minute was occasioned by several full breaths plus relaxation; the subject's own words were, "I let go and was almost numb." The tension promptly sprung back. The rise beginning in the tenth minute was occasioned by excited talk about an expiratory method. The rise beginning in the seventeenth minute, in both diastolic and systolic observe, was occasioned by expiratory apnea—holding the breath with diaphragm relaxed. The tension snapped back to the average and the diastolic, as usual, below it. Number of measurements, 29.

This man was a Yankee nearly 50 years old; he had had, it chanced, nothing whatever to eat since 24 hrs. before. His heart-rate before the measure-

ments was 42, the same 75 mins. later, 21 mins. later 40, and at the experiment's close, 45; his "Sweedish-system" training is here illustrated.

This fall is due solely to relaxation and to deep breathing, two of the physiological processes which cannot occur in an over-tight and ill-fitting suit of clothes! Incidentally, these suggest the importance of systematic exercise, including the old-fashioned, "Swedish" habit of deep breathing. The marked rise beginning in the seventeenth minute (expiratory apnea) has little obvious relationship to the clothing or to its wearing, save that tight clothes would make such a rise easier.

tightness are already familiar to most of you, being more obvious than the arterial tensional variations. Venous stasis and congestions from compression by clothing are not infrequent where the sartorial conditions are bad enough whether from design or necessity. An obliging society-woman of "the old days," whose memory had remained undimmed, could relate more examples of these particular relations of clothes to the circulation than anyone would care to print. The intelligent gynecologist could relate more which would be still further impressive.

Besides the five hemobarograms reproduced herewith, there are many among the hundred and more in my present portfolio that are almost equally *à propos* to our immediate purpose of discussing clothing-fit. One systolic rise represents a state of unpleasantness; there is nothing particularly striking about it, but extreme unpleasantness often is due to improper clothes. Another is marked "worried," the individual meanwhile recalled a subject of worry. (I never inquire what stimuli exactly are, for I am satisfied to know that it is either pleasant or unpleasant.) Another shows a marked reaction at the recall into the mind of some old worry in a young woman. Here is a very marked reaction of pleasantness, some mode of pleasure that is imagined; there is a marked fall which is always the case provided the pleasantness does not excite, does not come as a shock. General pleasantness proper will lower the blood-pressure,—compare clothes satisfaction!

I am surprised to see that I can get as strong a reaction by asking a subject to think of an unpleasant thing or of pleasant action as from the actual thing. It is very striking indeed how somatically strong the imagination is; and this is a point that is worth while for our immediate purpose: Whether a person

does "look like a guy" or not, if he *thinks* he does it amounts to the same thing, so far as the bodily reaction is concerned.

There is an extraordinary curve of the rise of blood pressure from holding the breath, a rise up to two hundred and thirty millimeters in a man who had been trained in breath-holding. This gentleman, Dr. J. G. Smith, held his breath two minutes and the thoracic venous congestion put his pressure up from his average one hundred and thirty-five to two hundred and thirty,—

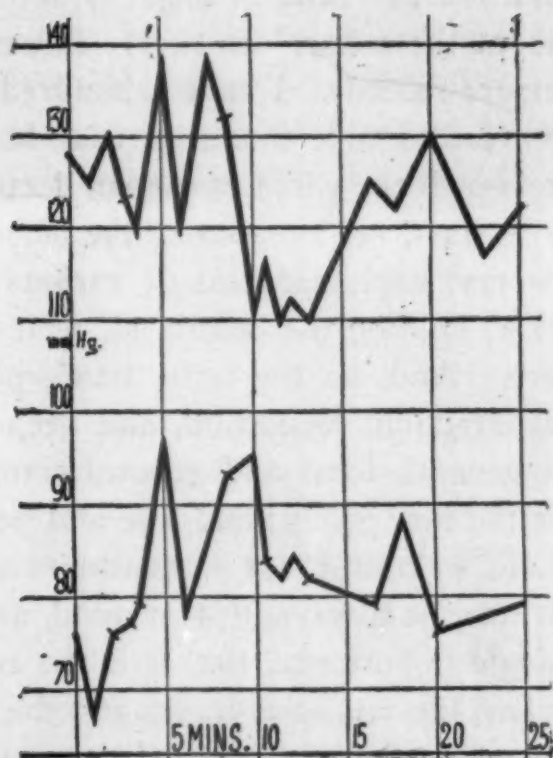


FIG. 3.—Hemobarogram B¹4 shows, among other reactions, the vasomotion of relaxation of mind and body while sitting. In the systolic range the lowering began in the eighth minute, but the diastolic rose for a minute and a half. The rise in the fourth minute came from an exciting pleasureable memory; that ten minutes later from anxiety; while that in the seventh minute represents the powerfully dynamic concomitance, if not effect, of imaginary physical exertion: "chinning," pull-ups, in this case.

The subject was a most energetic fine tall woman of nearly 22; suspected to be "in love." Her initial heart-rate was 96; nineteen minutes later 76; at the end 84. The high rate at first may have been due partly to much physical exertion preceding the making of this set of 36 measurements.

The habilitory psychology of this hemobarogram is chiefly in the relaxation reaction inexpedient in clothing either tight, or irritating from malfitness.

in two minutes. That too has a slight application for our work, that the respiration should be free and that you should be freely able to take deep breaths, often.

There is a record showing the vasomotion of anger, a marked rise, though purely imaginary anger. I do not have to get my subjects really angry; merely to have them imagine that they are angry, or recall certain company, etc., is enough to have a great rise in the systolic and the diastolic pressures. That is the condition in which a tailor's patron is when he allows him to be angry when buying a suit of clothing. Plainly clothes have much to do with the emotions. Here is one which the subject reported his condition as "heat in anger"; he "got a little hot (vasomotion) about the collar," he said! But enough for now of the blood-pressure records. I have a hundred or so of these, and each one represents two, three, or four hours' work; but most of them are worth the while as human documents.

These conditions then, (to *summarize* the blood-pressure matter): Anxiety, worry, unpleasantness of various kinds, chagrin, grief, anger, terror, holding the breath, all tend to raise unduly the blood-pressure. And, on the other hand, pleasantness and calm pleasure, satisfaction, relaxation, and deep breathing tend to lower it. In general, local and general compression would tend to stand for the first group; and loose and perfect "fit" ness would tend to make, of course, for pleasantness and satisfaction. (See below.) It may be always kept in mind, as of basal practical and psychologic importance, that it is the emotional tones, the pleasantness and the unpleasantness, and the excitement, of emotions which provide the motives of behaviour, both vegetative and deliberate. *Clothes* have very strong emotional interests for most women and children and men, and their influence would be undeflected by ideas.

The accompanying hemobarograms, then, show on one hand the effects of "inside" influences: chagrin, anger, terror, and holding the breath, toward *raising* the peripheral arterial tension. Others of them show the effects of mediate pleasure, of pleasantness, motor and mental relaxation, and of deep breathing, in *lowering* the arterial tension. The first group, tending to raise the blood pressure, is brought about in general by constriction such as would be caused by generally too-tight clothing. On the other hand, clothes-*fitness* such as we have already considered,

and general loose accommodation to the body, equal in all places, would make for low pressure, in the way of greater comfort and life-satisfaction. These sample graphs and the legends which accompany them make apparent this rather important relationship of clothes to the essential blood-supply.

In his earlier experiments on surgical shock, Professor George W. Crile of Cleveland had made for him a complete suit of hollow rubber clothes inflatable with air from a pump, the intent being to compress the body of the shock-victim and to exert a uniform and considerable pressure on nearly all parts of the skin. The object of this elaborate and bothersome experiment was in brief to raise the peripheral blood-pressure of persons who were dying because their arterial tension was far too low in the central

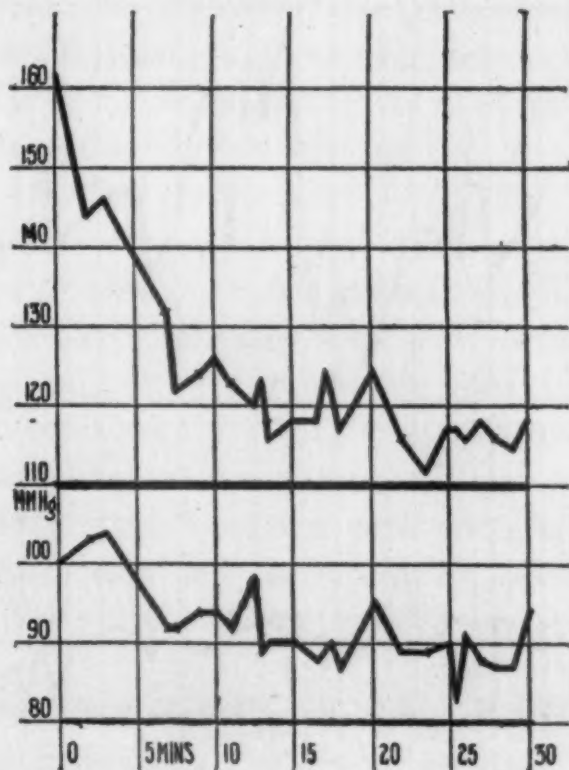


FIG. 4.—*Hemobarogram B²²²*. This is the thirty-minute record of a woman of 42 years who tests only 1.6 years on the Yerkes point-scale system of tests. When the cuff was first distended (170 mm. Hg.) she burst quietly into tears, emotionally shocked at the novelty of the painless sensation. Within the next 13 minutes her systolic brachial-artery tension had fallen 46 mm. Hg., her diastolic 11 mm., her heartrate falling meanwhile from 112 to 88, where it remained. Within seven minutes from the beginning she was in her usual good humor. This record, atypical of the hemobarograms of mental defectives, is presented solely to illustrate the physiological "limit" of blood-pressure rise (due purely to office-apprehension) and its spontan-

eous fall under the more usual office conditions. Very many persons, both adults and youths, some of whom would "test up" rather better than 1.6 years Yerkes, show just this kind of blood-pressure phenomenon—however little the "rank and file" of physicians as yet realize it.

Heart-rate before the measurements, 112, fourteen and twenty minutes later and at the end each 88. Measurements, 51.

Here is a record that importantly shows the fall of blood pressure from becoming calmed down with the loss of anxiety. I have a scientific grievance against the medical profession, in general, although I am a member of it, that they have been "taking" blood-pressures once or twice when up and only then, wholly regardless of the fact that perhaps ten minutes later it has fallen thirty or forty millimeters.

For our *present* purpose, this clearly represents the marked fall of arterial tension when one ceases to be worried about anything. This, I take it, will appeal to a young woman perhaps more than to a young man:—if she have a suit of clothes on that has in it or on it absolutely nothing about which she can worry, you might expect to lower blood pressure in that manner; and to keep it low! "The peace which religion cannot give," as the lady explained to Herbert Spencer. Hablatory science must apply itself in part along this direction, thus lowering the prevalence of Americanitis.

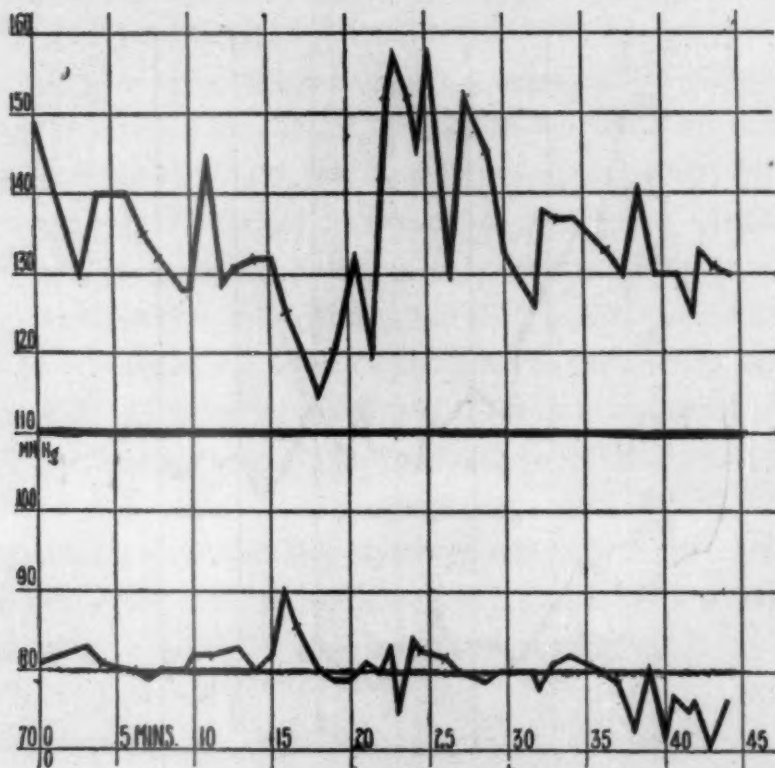


FIG. 5.—Hemobarogram A17. This patient was a woman nearly sixty years old, normal, but typical of the Yankee women who are always busy and usually worrying about something, imaginary or real, be it only their clothes, at rare intervals. The variations here are spontaneous nearly, and with a systolic maximum of 42 mm. Hg in 5 minutes and a diastolic maximum of 15 mm. Hg in 7 minutes. The diastolic curve shows the relatively small variation characteristic of the arteries after fifty years. The heart-rate remained about 60.

The systolic rise from 128 mm. to 144 beginning in the tenth minute was "from" a momentary anxiety; the relief-reaction (to 115) is rather striking. In the twenty-second minute there began a very marked systolic rise (from

120 to 157 mm.) due to the sudden onset of "worry" (as the protocol reports it), and generally sustained for nearly three minutes. This vasomotor constrictor spasm is weakly reflected in the diastolic series of measurements.

When rises such as these occur from slight anxiety in a woman of sixty or so with normally sclerosed arteries, it is easy to believe that in many younger women clothes-worries and chagrins considerably upset the equilibrium of the vasomotor system.

nervous system, the vegetative vital processes, therefore, being in a state of rapidly mortal decline.

Over-tight, universally over-tight, clothing must act in the same way as Crile's shock-suit, namely to raise the blood-pressure, but now when it is already high enough, and so to help continue and make worse the rather notorious "Americanitis," (inflammation of the American) the pace of mental tension and general strenuosity that kills. General irritation or compression of the surface would at any rate materially tend to congest the viscera and the brain, irrespective of the actual arterial tension in any part of the body. The skin, as is well known, is one of the five great vasomotor reservoirs for the blood; and if by compression its arteries and arterioles are flattened, a large amount of the blood must be forced into the viscera and the brain. Until we are certain of the truth of the finding of Professor Jno. F. Shepard that sleep involves cerebral congestion, the precise significance of this reciprocity must be still more in doubt even than heretofore. My own vasomotor observations tend to corroborate Shepard's results, and from an entirely different source. This whole matter is well worth emphasis in the psycho-physiology of clothing, for what it may later (when we know more about vasomotion) prove to be worth, which probably is much.

Clothes to a degree fit themselves. This auto-fitting of clothing to the action of the body which it covers is more or less proportional, and in various ways, to three characteristics: 1st, to their material; 2nd, to the amount of use which the clothes have; 3rd, to their tightness. This automatic fitting tends to come about, it is plain, by the process of stretching where the garments are relatively tight, and of wrinkling (often fairly tightly) where the costume is looser. A week's wear is necessary to make a suit really fit the man's body in its quiescent shape and

also in its action. This is a practical point which tailors seemingly should take into consideration if they wish to do ideal work in every way for their patrons, and to leave them wholly content in and therefore with their clothes.

D, Voluntary movements and posture. Skills. We come here to the consideration of voluntary movements, not more important for life, perhaps, but far more interesting and more psychological than the three groups of influences and relations we have just considered. Skill of a thousand kinds and grace of many varieties, the two combining into various kinds of efficiency, are concerned with clothing in this particular respect. It is the movements, the behaviour, of the man which is the important thing, and not, so to say, his chance shape when he is standing on the tailor's stool to be measured. Old clothes fit, and therein mostly arises the common satisfaction of wearing them, especially when one is at work. The psychology of this runs perhaps somewhat thus: The control of voluntary movements, of all movements in fact, is largely by the inherent sensations of the action-system, formerly and technically called the muscle-joint sense, but now increasingly often and more properly kinesthesia. These guiding inherent sensations are normally (save in new and truly voluntary movements, which are *rare*) more or less subconscious or even wholly unconscious. It need not, however, be suggested at even this early stage of physio-psychology, that such sensations are none the less effective because they are subconscious.

These sensations and subsensations constitute, it is plain, the chief of the sensory influences, in fact of all the afferent nerve-impulses, that are of practical, work-a-day value in a world still and for many centuries to come primarily a work-a-day world. Their nature in somewhat greater detail, based on research, the present writes already has set out.* Perhaps one may repeat two or three paragraphs relating to the neurologic conditions of skill, from that article:

Between these partially opposed types of motor consciousness

*G. V. N. Dearborn: "Kinesthesia and the Intelligent Will," *Am. Jour. Psychol.*, XXIV, 2, April, 1913, 204-255, illstd.

are many indefinite degrees, apparently, according as a given limb is more or less skilful in a given group of movements, in number of course uncountable. It is, then, one of the inductions of this experimental work that *the motor skill of a person in general, and also in particular actions, is more or less proportional to his habit and capability of using the conscious kinesthesia* for the current inhibition of actions elsewhere coördinated and actuated. As has been shown already this actuation comes from (spinal?) kinesthesia in combination with external control, usually either visual or auditory. We are rapidly learning that all bodily processes and conditions are the algebraic resultants of balanced tendencies, whether nervous, chemical, or mechanical. The neuro-physiology of skill as in part determined by the afferent neurograms of movement, certainly is no exception to this rule. The unconscious and the conscious, the actuating and the inhibitory kinesthesia, surely share and complement each other in motor control. (A person's skill, therefore, appears to be a 'function' of his habit of usefully *fusing together* his motor ideas proper and the resident movement-sensations which in him are adequately conscious. Compare Slinger and Horsley's conclusion that "the muscular sense under necessity can, by education, be brought to a point at least one-fourth better than that learnt by a normal-seeing individual."

But, again, compare the practically unanimous opinion and practice of instructors in all kinds of motor efficiency (music, instrumental and vocal, manual training, physical education, legerdemain, etc.) that attention to the sensations of movement disturbs the performance and is therefore to be avoided. At least one successful instructor in voice, of my acquaintance (Mr. B. G. Willard, late of Harvard University and now of the Sargent Normal School), makes this avoidance of local consciousness the very key-note of his method, substituting therefor an intensified general consciousness of effort.

Reconciliation of these two attitudes, one academically scientific and the other purely empirical, but both obviously true, would seem to lie in what has been learned in these experiments, if indeed skill does consist *in a trained fusion of the extrinsic motor ideas and the intrinsic inhibitory conscious control.*

As the original research-report in the *Journal für Psychologie und Neurologie* (January, 1913) showed, these conscious motor skill-sensations probably are inherently inhibitory, as is the neo-pallium of the cortex cerebri, their "center." If therefore they are shut out of the conscious mind or disturbed to a practical extent, impulsive action is in no wise prevented from its function to "carry on," but the fine coördination of forms of motor skill, including grace, is destroyed and the productive practical efficiency coming from skillful ability, for the moment or for good, is lost. As already has been suggested, the vexations and discomposing sensations of the skin, of the kinesthetic regions, and of the viscera produced by constricting and otherwise ill-fitting clothes, are just those sensations and irritations, fully felt or not, which would be *most apt to disturb* the skillful flow of the skill-neurility.

These same considerations apply to *grace*, which concept relates always properly to movement actual or implied, kinetic or potential. Very recently (1917), G. H. Browne (of the Browne and Nichols School, Cambridge), himself a skilled fancy skater, has published at my suggestion, in "Mind and Body," an interesting discussion of the psychology of grace, and also, a few months later, a translation of the first chapter of the third part of Souriau's neglected "L'esthetique du mouvement" (1889), found in Harvard's Philosophic Library, and referred to and quoted from by Vernon Lee in her refreshing books. Both of Browne's articles provide timely examples of graceful movement, to which the clothing concerned, both subjectively and objectively (see below), has direct and important relation. Inasmuch, however, as grace is only a glorified aspect of skill (with beauty added to utility as its goals), we need make no special study of it here. The same principles that apply to skill apply also to grace, a form of skill. ◊

Avoidance of this clothes-cause of awkwardness and of motor inefficiency, thus due to an unnecessary (and still unnatural!) source of distraction ("man by nature is a naked animal"), may be reduced to a requirement that *local clothes-consciousness, indeed general clothes-consciousness, should be avoided*. The

whole world in its bodily work demands this relief, whether it be an endowed philosopher elaborating a fine metaphysical knot or snarl for some endowed "Kantian Journal," or the equally useful body-"laborer" helping to dig out a new city-subway; or milady murdering sleep and Stravinsky (who "jolly well" deserves his fate) on her rosewood concert-grand. The whole world gets something of this relief too, because every body-worker wears some adapted form or aspect of

Work-Clothes. This phase of our clothing is the best available sign that the rational human worker in the long run everywhere tends to adapt his raiment so that it will not limit in any degree his bodily action, thus lessening his basal vocational skill, earner of his daily bread. It is doubtless true that the worker realizes this not at all or at any rate less fully than he realizes the other reason for work-clothes, namely clothing- and money-economy. But try to imagine Kreisler playing his violin at a concert when he was wearing a coat with arm-holes too tight! He would from preference, I doubt not, startle his conventional but easily appeased audience by playing to them in his bath-robe.

Consider the increasing hundreds of trades and occupations over the world and see that each, in forest, work-shop, or in *atelier*, has its own work-clothes more or less characteristic, from the loose coarse breeches of the sweating puddler to the elaborate mask or armor of the dangerous trades. Most of these sets of clothes are directed toward the securing of the greatest expedient *freedom of bodily and of mental movement*. Otherwise they would not be workmen equipped for their work, but dilettanti in the popular sense of the word.

Each movement, more or less, is a unit of behaviour represented by a definite brain center, as is shown indeed by their specific derangement, technically called apraxia. These centers seem to be situated especially in the frontal (and parietal) lobes. Smooth action, then, of every sort, skill, grace, and efficiency in any motor ability, are more or less dependent on good bodily attention and neuromuscular tension (*corpus striatum?*), on the undisturbed process of control from the fore-brain. These impulses coming from the central nervous system, especially the

brain, are what are called, of course, motor ideas. If they be interrupted and disturbed in their flow, especially by a purely artificial stimulus, vision is brought in to control the motions, displacing and deranging the normal governing kinesthetic impressions and giving them extrinsic control of the actions, but making the latter jerky, angular, and unskillful.

Now the restraints, discomforts, irregular pressures, irritations, constrictions, lack of support, and other bothers of ill-fitting clothes (in man, perhaps, more than in woman?) are *precisely the kind of interrupting sensations most certain to disturb ideal bodily action*, so intimately are they related to the disturbed flow of kinesthetic sensations. Such intrinsic sensations of the skin and of the action-system within it disturb personal psychomotor action far more than would more conspicuous extrinsic sensations such as sounds, voices, odors, and the seeing of moving objects, coming from without the organism. Work-clothes, then, as old clothes, mean to efficiency far more than economy of clothing-cost,—they mean an excellent *fit* by bodily adaptation, stretching here and wrinkling up there, so that comfort remains at its maximum and undisturbed. This happy and yet familiar condition of clothing-affairs prevents those distractions of the inherent movements and sensations which actually control the organism. To be perfectly at ease when clothed, this kind of ideal fit, acquired only by actually wearing the clothes, is indispensable. Otherwise there is either the discomfort leading to the combined inefficiency, or one form or another of a bad form of clothes-consciousness which, as we shall see below, is a mild emotional state which in itself and for the moment of course is distracting. This matter would bear qualitative and quantitative elaboration in a laboratory.

E, Considerations of general behaviour. In this discussion of behaviour, we refer now to one's social movements among his fellows and to one's habits in life so far as social communications are concerned. This phase of human behaviour is more determined by clothing than many have ever stopped to think or to realize. Without much thought, the following at least may be suggested as social movements greatly or slightly, as the case

may be, determined by one's raiment, and others there are a-plenty.

- ✓1, How much one "goes out," both into the street, and
 - 2, Into society in general, how many "calls" one makes;
 - 3, The time of day or night at which one goes out when living in town, for several reasons.
 - 4, Where one goes, that is, the sort of place to which one goes, both in town and in the country.
 - 5, How much company one invites to his home, and,
 - 6, To some extent, the nature of that company.
 - ✓7, How much one attends church, disgusting Easter parades, etc.
 - ✓8, How much one attends the theater, and the nature of the entertainment so designated, whether it be a dark movie among often unfashionably or ill-dressed people, or the grand opera with its brilliant promenade and conspicuous visiting.
 - ✓9, Clothes frequently help people to get "jobs," and to hold them, but (see below),
 - ✓10, Clothes help others to miss positions and to lose them.
 - ✓11, The amount of exercise one takes and its variety are determined to a considerable extent by one's habits of dress, and especially perhaps by one's laziness in regard to the frequent changing of one's clothes.
 - 12, How much one sits and where and how one sits. (One thinks here of the attention which the "dude" pays to the creases in his trousers, and even dignified madam to her dress-skirts.) (When I was a young lad it was inevitable that a boy having a pair of "hand-me-down" trousers thrust upon him should take them first to a tailor that the creases in them might be wholly removed!) And sitting has much to do with the adolescent maldevelopment of the pelvis, concerned in the birth-rate.
 - 13, How much one eats and drinks (the very basis of much bodily comfort) is determined to some extent by the clothing.
 - ✓14, How much checking-balance one may keep at the bank, determinant of behavior to a noteworthy degree.
 - ✓15, One's personal beauty (in the case of the beautiful sex.)
- It is obvious that even in a list thus laconically set down there

are topics enough for several essays in the socio-psychology of dress. Some of these essays if they reached as far down in the fundamentals of human biological nature as it is meet they should, would prove of importance in the unravelling of quite a bit of human motivity.

The last has a perhaps appropriate word at this point. Bodily beauty is as much a matter of behaviour, of action, as of structure. Males human have no personal beauty in the proper sense of the term save this beauty-of-action, but the female (child and adult) enjoys (and often how keenly!) both kinds of beauty. As we have seen, improper or ill-fitting clothes readily check free and graceful action, and perhaps all but abolish whatever personal beauty a baby girl, a girl, a young woman, a woman, or an elderly woman may exhibit to herself as well as to others. Thus clothes, feminine clothes especially, tend to determine by limitation the life-beauty of their wearers.

Sixty years ago Herman Lotze published several pages in his well-known "Microcosmus" which come very pat into our present discussion, although unknown until quite recently to the present writer. He suggested three points, each of which has a good deal of psychologic interest:

1st, That clothes often tend to expand the personality, and in several ways, each of which is of basal import. Clothes, or at least parts of one's costume, may be considered as a kind of implement, he points out, to the outer limits of which our personality tends always to expand. In using a chisel, for example, a man's personality is on the bevel or on the edge of the tool. In like manner, in using or "wearing" a cane, one is apt to have his attention at the further end of the cane, or at the proximal end, or at both ends. High heels act in somewhat the same way. Swagger-sticks, so common now, and crutches obviously tend spatially to expand the personality; so do high hats, very broad hats, coiffures like those of Elizabeth's day; even bustles tend to extend the individuality of the wearer and in a direction at which one "wonders." But compare certain wellknown ideals of gluteal obesity still fashionable in the French Congo! In my "Emotion of Joy," 1899, I emphasized other factors and condi-

tions of this personal expansion and motor extension, but wholly missed this sartorial one which Lotze suggests. In a smaller way thick ulsters, topcoats, furs, clumsy overcoats, and superfluous wraps are a badge of enlarged personality of their wearer. It is plain from the frequency with which well-to-do light-headed people assume these implements which connect their personalities with the environment that there is always a great amount of pleasantness and often snobbish satisfaction connected with their use. They are in fact an important factor in social life among naïve people who pay over-attention to such extrinsic matters.

The second point which Lotze makes is that clothing often lends a joyous sense of motion, and especially of the freer motion, to its wearer. Flowing garments, hanging or waving drapery, nodding millinery, and so on *ad extravagandum*, make us "feel as if we ourselves were present in the gyrations of the freely flowing ends," as Lotze movingly expresses it. To the philosophy of the pragmatic ME we actually are so present, of course, for the personality so seen includes all that immediately concerns the individual. But more than one's actual clothes, all hanging, nodding, swaying ornaments (bags, plumes, belt-ends, ribbons, coattails, lapels, furbelows, veils, tippets, scarfs, hat-brims, wide-flowing skirts) act in like manner to lend a sense of vivacity to the wearer, and even to the observer by the principle of empathy.

Kinesthesia comes in here too, and explains how this interesting effect of action is produced by subconscious stimulation of the movement and freedom which stands in general for youth, for freedom and so for happiness. It is like seeing or feeling one dance, which gives all rightly-minded people considerable pleasure (See below). And the social relationships of clothes go even further than this into sexual attractiveness as Robert Herrick, wise man, keen for such feminine things, points out in his familiar poem:

"A sweet disorder in the dress
Kindles in clothes a wantonness:
A lawn about the shoulders thrown
Into a fine distraction;

An erring lace, which here and there
Enthrals the crimson stomacher;
A cuff neglectful, and thereby
Ribbons to flow confusedly;
A winning wave, deserving note,
In the tempestuous petticoat.
A careless shoe-string, in whose tie
I see a wild civility;
Do more bewitch me, than when art
Is too precise in every part."

Silks, therefore, thin, light, but not too precise, easily flowing by the bodily motion as well as by the breeze, make, for purposes of grace, the ideal fabric, especially light Chinese, Indian, and Japanese silks, and chiffons.

On the other hand, heavy ceremonial silks, for example the black grosgrain skirts which some of us remember in our childhood "that would stand alone," give the restraint which we shall next consider, following Lotze, as well as the expansion of the personality and the organism which we have just discussed.

✓ Soft, light-weight silks, therefore, are the most psychological material, so to say, for at least feminine dress, not only for their own beauty and warmth, but for their extension of the activity, real as well as imaginary; and not only those of the wearer, but of the observer as well.

X The third point which Lotze makes, relates to the tightness of clothing, especially to stays and corsets, and we might add, to the tight coats of the British "Tommy" on parade, of five years ago. Says Lotze, "The greater or less tension and firmness possessed by the material in itself or due to its cut, is transferred to us as if it resulted from our bearing." That is, a corset's firmness on all sides, thinks Lotze, makes us feel as if we ourselves were thus firm and self-reliant. Constraining garments thus may at times tend to give some one a self-consciousness which has distinctly self-exalting features, as here suggested, but personally I think that far oftener this oppressive restraint works quite the other way, namely to lessen self-confidence and to limit one's tendency to initiative and to action. It acts as a *suggested discouragement*, and therefore is "all to the bad" in the majority

of cases. The important matter of arterial tension in this restraint connection has been discussed already. One paragraph from Lotze's four pages is so good in various respects that I need not refrain from quoting it:

"With this sense of firmness which she does not quite despise, the maiden mingles the feeling for easily moved and finer garments, for as a matter of fact the fragrant folds of the light and gauzy stuffs with which she drapes her form are not merely intended to be graceful in the eyes of others. On the contrary, the wearer herself is by feeling directly present in all the graceful curves that with featherweight touch but a few points of the skin, and yet through these points excite the most distinct sensation of the breadth, lightness and softness of their sweep. Nay, often the pleasure afforded by such a sight is derived far less from the pleasing effects of the drapery we see than from the fact that we can transport ourselves by thought into the imaginative joyous or dainty vital feeling which the myriad petty impressions from the garments must infuse into the form which they conceal." One could scarcely find a better suggestion of empathy than this from Lotze; see the remarks below.

To interpret these undoubted facts, we must seek practically the same conditions that underlie the subjective and the objective pleasantness of dancing, skating, swimming, and "calisthenics." This, in short, is the psychology of skill and of grace into which Mr. George H. Browne, for example, has recently ventured.

Kinesthesia in its relations, first, to bodily, and second, to mental control; third, to the imagination of the consciousness of others; and fourth, to bodily attitudes as determinants or concomitants of emotional states of mind, (as the James-Lange theory of emotion shows) is concerned here, of course, importantly, in an explanatory way. The muscle-joint sense, so-called, as the connector or index between bodily motions and strains and our mental processes, is here of satisfying explanatory importance. This matter, however, is of such a nature, so complex and so subtle in description that its exposition would require more space than can be here afforded, and must be postponed, to be done, it may be, elsewhere.

This feeling, however, of a perceived person in graceful action, and the mediate realizing of the sensations and the excitements and the low emotional tones which the dancer or skater is with delight experiencing, is what Lipps many years ago termed *Einfühlung* and what, as you know, Titchener has recently named empathy, and expounded in various directions. Empathy certainly is of permanent importance in the psychology of clothing. For example, each individual who personally "dresses," wishes every observer of her success to get into empathy with her; to realize how much her clothing is adding to her personality; to appreciate how much satisfaction and enjoyment it is giving her; and to estimate, even at the value which she sets upon it, how much it adds to her personality and to her importance, personal, matrimonial, and social. Plainly empathy has kinesthesia as its heart and stomach, as well as its skeleton. Such imagined kinesthesia, second-hand, as it were, is one more evidence of the frequently quite indispensable subconscious aspects of mind in our behaviour, both personal and social, and every instant of our lives.

The psychology of the discomfort and unpleasantness as well as the inefficiency which come from the expedient if not forced *inhibition* of naturally free bodily movement, or even from their compelled restraint, by some passing fashions in clothes, is not so briefly statable, although even more important. It involves obviously that basal physiology which relates to motor inhibition. Some of the underlying conditions are suggested in my "Notes on Affective Physiology" (*Medical Record*, New York, 89, 15, 8 April, 1916, pp. 631-641, illstd.). This material explains scientifically the reason why tight, stiff, and cumbersome clothing lessens efficiency both directly (by mechanical restraint) and indirectly (through discomfort and inhibition) that is, physiologically and psychologically, Lotze, a man of the most excellent wisdom and breadth of view, to the contrary notwithstanding. This material following provides the foundation on which a scientific art of adequate dressing might perhaps be erected, for it explains the psychologic basis of limitation and of restraint, both of which modern clothing implies.

Too little emphasis certainly has been laid upon the twofold nature of human personality, upon the complete *duality* of man's nature, especially to its physiologic and psychologic foundations. Poets and philosophers have seen and beautified its moral aspects, and have shown in terms that cannot be forgotten that the sanction of our very conception and incarnation and birth and living lies all but wholly in the logical necessity of developing individual personalities through temptation, struggle, "denial of the will-to-life." Whether we see it every day in the unselfish self-denial of the dear women in our own households or read in leisure hours of its esoteric system in the wilds of ancient Thibet, we are continually aware that it is one of the dominants of our actual world.

And when we turn to the anthropologic aspects of this same matter we find our fundamental just the same and find it closer to physiology and neurology. The phylenic "series" shows at first a preponderance of biologic egotism, of racial impulse, of pleasant activity, expansion, push. There is excess of movement over control, the utter mechanism of the plant, the tactic processes of the protozoa, the simple behavior of the early metazoa, play, the noise and irresponsibility of childhood, the dance, boisterousness, freedom of every kind, the grand flourish, license, extension of personal and family and national power, "might makes right," "to the victor belong the spoils," force, great guns, invasion, pleasant hopes of conquest, freedom to progress even in the sun regardless of all but one's self.

But the secret of the sanction of our incarnation lies not here! Rather does it lie in a process which uses all this as Emerson says, "as hands and feet" by which it may accomplish its great world-purpose each in his own individual way. I mention such relations in this discussion of physiology (which ordinarily tells none too much of God and personality), only to show how important and basal and deep and universal are the ramifications of world-processes which at heart are in practice muscular and nervous and even epithelial. And it is worth while to see it so.

Man, then, generically and individually becomes civilized, even if slowly, grows up, attains the full measure of a being who

"dares do all that doth become a man," even to attempted conquest over the vegetative and biologic machinery which gives him his *energy*. He restrains his impulsive machinery, serves as governor to his flywheel, so to say, often so massive and with such dreadful inertia of motion! He learns to inhibit especially his emotions and thereby, more than in any other way, qualifies for a citizen of our little world against whom that world will not rise in wrath. It is of course now our hunt to trace out some few details at least, or relative details, of the nerve-paths and nerve-knots of that inhibition, especially in relation to the algodonic tone of the emotions and the feelings.

It has already become reasonably certain that *freedom in itself is pleasant*, and that *restraint* biologically speaking—that is, naturally, in naïve individuals—is *inherently disagreeable*, whether from without or from within. I would emphasize the provisional clause in this part of my thesis, "biologically speaking—that is, naturally, in the naïve individual," for we shall suggest below that it loses this unpleasantness as the person becomes a psychologic personality. As the wise "George Eliot" says in "Felix Holt," "There is a sort of subjection which is the peculiar heritage of largeness and of love; and strength is often only another name for willing bondage to irremediable woes." We all know that freedom as such is pleasant, and a seven-foot shelf of books, or one even longer, might be readily written, given time, to extol freedom's pleasures in every possible realm of human experience. It has, I think, not been often effectively suggested, on the other hand, that in the unsophisticated animal, dog, or child, or savage, inhibition is essentially and inherently unpleasant (until, by submersion—see below—its disagreeableness has been mostly lost). * * * *

It seems to suffice for our present concern in clothes-physiology to point out that the inhibition of impulsive tendencies (mostly pleasant on well-accepted principles) is by their very nature usually an unpleasant process. Even if unaware of the fact from personal experience, the reader cannot fail to realize that sometimes the restraint of our impulses, of our biologic, vegetative instincts in particular of course, rises into the heroic,

involving as it does a maximum of struggle against unpleasant lacks of action along ancient hereditary paths. To restrain one's fatigue, one's wrath, one's hunger, or one's lust is oftentimes, to many men and women, their experienced maximum of disagreeableness. These are gross examples which check to the onrush of biologic satisfactions, teleologic intentions, sufficiently "explains" to the average student of neurological psychology. It should, however, be noted as we pass them that in this contest between an impulsive process and a tendency to its restraint obtains the precise relationship to which early psychological biologists (*e.g.* Romanes) ascribed the origin of consciousness in the evolving phyletic order. McCabe's notion is far less satisfying: he actually refuses to admit the consciousness of animals less complex than birds, a truly Cartesian sophistry; but "the worse is not the better reason," after all.

For our present purpose it is an important consideration that in the personal, as well as in the social consciousness and memory, unpleasant experiences actually are more conscious, more vividly real, and much more memorable than pleasant experiences. And this is true as a well-realized fact wholly independent of any theory of feeling or of neurology. It is the blizzards, not the periods of delightful weather, which are remembered; a moment or an hour of agony agitates the memory long after ecstasies have gone, almost past recall. This is not due to some inherent pessimism in the human mind, we may be sure, for the majority of folk are practical optimists. It in part is due, say I, to the basal physiologic condition of innervation, namely that *the conscious restraint-kinesthesia underlying mentally the movements concerned is more closely related to unpleasantness than is the actuating movement-neurility.*

Another reason doubtless arises in the fact that the grand mean balance of human experience is pleasant rather than unpleasant; on this basis alone would a human people with power of initiative to suicide remain in the long run alive, for "Lo, you are free to end it when you will!", as William James again reminded us. Here, then, is a background of moderate pleasantness and against this the lurid experience of pain or of the dis-

agreeable in any mode stands out with far more distinctness than would an experience toned like the background. As we pass, it is worth noting that almost all the behavior of the average adult is physiologically impulsive and reflex and semi-automatic, what we may best denote perhaps as habitual voluntary action. As thus impulsive it is pleasant because relatively free. As this voluntary and inhibitory only to a slight extent, strictly voluntary only at extremely rare intervals and in many persons never, after childhood, it has little of the difficult unpleasantness which is related to the kinesthetic foundations of restraint. To the galley slave, "Jean Valjean," life for just the opposite reason was unpleasant and revengeful, inhibitory, fearfully voluntary, a memory to embitter eternity. We return then to our scenario with widespread evidence that free action is by nature pleasant, and inhibition, characteristic of voluntary movement, whether devised from within or forced from without, difficult, unpleasant, and hard. * * * *

— We are especially concerned now, therefore, with inhibitions that are voluntary until by habituation they have become more or less mechanical. As example of one of these basal voluntary inhibitions closely related to the emotional tone-balance consider the checking of muscular movements when listening to real music. By real music is meant music with a wellmarked rhythmic beat. If one attend many orchestral concerts, even where the music performed is of the very "highest class" and the audience the most "cultured" group of society, it cannot fail to be noted that the spontaneous, that is real, enjoyment is greatest from the music with strongly marked rhythm, and least, with a forced fashionable applause if any, at the artificial concoctions which ramble instead of march. At a recent concert, for example Beethoven's symphony in F major (Eighth) was in contrast, after an intermission, with Stravinsky's impressionistic and un-rhythmic "Feuerwerk," vastly to the hurt of the latter, bad as it is. Some of the modern music forgets or ignores this neuromuscular basis of musical emotion and offers concatenations of harmony when the truly appreciative listener craves only what his inevitable organism demands to satisfy it—sympathetic and

synchronous activity. Thus music or that which pretends to be music now and then strives to express ideas when its sole language properly is feeling or feeling with a tinge of will.

True music then, we are sure, has a well defined rhythmic beat and is met in the naïve and natural individual at whatever age by voluntary muscular movements of the feet, head, or hands; within oftentimes are corresponding but ill-defined contractions of the vegetative organism. Now to inhibit these (unfashionable because disturbing) movements is distinctly an unpleasant effort and takes away from the musical enjoyment and continues to do so in a measurable degree at least long after the inhibition-habit has been thoroughly acquired. One longs subconsciously, so to say, that he might hear such music when he were free to meet it in the natural way. Here, of course, is the basal psychology of the dance, and likewise to watch dancing while standing or sitting still is an unpleasant experience and that despite the joy from the well-marked music. In all this, it seems plain, we have the somatic (neuromuscular) prototype of the pleasant unimpeded impulse and of the unpleasant experience of inhibiting this impulse, both being essentially kinesthetic.

This vegetative impulse furnishes the ways and means, the thrust and push, the substantial and inherently enjoyable activity even to abandonment which makes life interesting. On the other hand, the restraint of all this to suit the needs of a social environment, requires strife and weariness whose only reward is itself. There is here, however, the half of the personality, in fact that part of the total human behavior which is commonly deemed (but wrongly, we may see) the very essence of humanity, of civilization, culture, delicacy, or whatever other term marks off for us our proud humanness from brutishness. * * * *

On the contrary there are two things (they appear to be but examples of many) which suggest that, to the young child, restraint, inhibition, personal control, whether in voluntary movement or in the feelings, is eminently unpleasant: First, the extreme infrequency of such acts of will, in itself *prima facie* evidence that they are disagreeable experiences, since agreeable acts tend to be learned early and to be frequently repeated. Second,

direct observation (see, for example, my "Moto-Sensory Development," p. 89, Day 211) shows a long latent period (ten seconds or so) for such difficult voluntary movements, resolved at length by a quick and frequently clonic motion, the whole suggesting difficulty physiologic and hesitation and unpleasantness psychologic. * * * *

Moderate feelings, weak emotions, are certainly not all pleasant (worry is a notable example), nor are all strong feelings disagreeable. But, on the other hand, there certainly is a correlation between the novel inhibitory or hesitational difficulty of an innervation and its unpleasantness. The ancient wisdom that one in time becomes accustomed to anything is but common recognition that emotions tend to lose their original unpleasantness by use, by habituation on the universal principle, whereas novel environmental situations producing strong emotional reaction have with them usually an admixture of unpleasantness. This, physiologically, I take it, is a restraint, a hesitation toward the unfamiliar, an example of the inherent unpleasantness of uncertainty.

Integration.—Possibly the above considerations are already enough to suggest to an unprejudiced mind that there is some kind of a direct relationship between doubt, hesitation, restraint, and inhibition proper and the unpleasantness of feelings. This concomitance seems based in the dual structure of the nervous system itself, and it is perfectly possible but not yet to be actually proved in a corresponding duality in the mechanism of muscle, both voluntary and vegetative.

The fears and unpleasantness and restrictions of ill-fitting and ill-adapted raiment; and the freedom and empirical satisfaction of clothes that are adequate, really adequate in the sense defined in this monograph, cannot but be based in this fundamental opposition-in-complementation above indicated.

Underlying many of the human motives is one of the deepest of human satisfactions, (and at heart a worthy one) the esteem of our fellows. An aid to our egotism or even vanity in many cases, usually, none the less, it is an important element in expedient "success" and in the development of our personalities,

save in the most "exaltedly" unhuman of individuals. To the rank and file of us to be esteemed is very much indeed, and to be generally despised is as bitter a cup as we are apt to have to drink. Says Edgar Wallace (as a chance corroboration of this idea), "The majority of crimes in the world are committed by people for the same reason,—they want to be well thought of. . . . Here is another gentleman who murders his wives in their baths in order that he should keep up some sort of position and earn the respect of his friends and his associates. . . . Here is the great financier, who has embezzled a million and a quarter, not because he needed money, but because people looked up to him. Therefore, he must build great mansions, submarine pleasure courts, and must lay out huge estates—because he wished that he should be thought well of." This motive at heart is physiological.

Our present concern with this "ruling passion" and "national characteristic" is that by its very purpose and by its location on the subjecto-ejective boundary, it is *clothing* which more often than anything else whatever furnishes the data on which the esteem of others, or their disesteem, is based. As Mr. H. L. Hillman of Boston truthfully advertises, "the clothes proclaim the man" (either directly or inversely!), and on their proclamation largely depends whether we are thought well of or ill. It is unfortunate, but undoubtedly it is true for nearly all our cursory estimation of one another in a crowded and busy world, too hurried to banish any accessible indication.

Fatigue, one of the most significant and pressing problems of psychology and of economics, has intimate relations to clothing in several respects. The details of the matter are too complex for our present discussion, and indeed the whole science, to say nothing of the art, of fatigue, weariness, and fatigue-prevention are in a formative stage from every viewpoint.*

In general, then, for present purpose it is enough to suggest that our day-clothes in general are distinctly and needlessly heavy, and confining and therefore unduly tiring to both the

* See Meyer Solomon's volume on the sense of weariness in the *Our Senses Series*.

body and the mind. Everyone who wears our kind of clothes (unfortunately the fashion is diffusing over the entire Earth) has felt the almost "delicious" relief of getting them off, thus allowing the body, if only for a few moments, to be *free*. Unrestrainedly to breathe both by lungs and skin; heart free to beat; and to move limbs and torso unhindered by a thick and hindering mass of rigid clothes to which the sensitive and easily fatigued nervous system as yet has not wholly adapted itself! The clothing-fatigue relations are complex and for some future detailing. It is something, however, to have in mind that clothes and fatigue are related, and importantly.

Sometimes, in some fashion-periods, the fatigue-effect of clothing, on women at least, amounts to a positive *disability*. This may be, and not very infrequently, a matter of life and death. Elizabeth Stuart Phelps, for example, in her "What to Wear?", writes: "When I read of the sinking of steamers at sea, with 'nearly all the women and children on board'; and the accompanying comments, 'Every effort was made to assist the women up the masts and out of danger until help arrived, but *they could not climb*, and we were forced to leave them to their fate'; or when I hear the wail with which a million lips take up the light words of the loafer on the Portland Wharf, when the survivors of the 'Atlantic' filed past him, '*Not a woman among them all! My God!*'—when I consider these things, I feel that I have ceased to deal with *blunders* in dress, and have entered the category of *crimes*." "These things" are being bettered the forty-five years since then; yet none too fast for a rational world.

A foot-note in this same book (1873) shows how much physical education has done: "Said a professor of elocution, of experience in the instruction of both sexes, 'When I first gave lessons at the Young Ladies' Seminaries, I was greatly puzzled. Some of my exercises are calisthenic, and require active movements of the arms. To my surprise, the girls could not meet their hands above their heads; many of them could not raise them half way to the required point. I was a young man, and did not know much about a lady's dress; and for some time the reason of this did not occur to me. At length I bethought me,

that their mode of dress was at fault. I have been obliged to discontinue [!] entirely the use of those exercises in girls' schools, though I think them very important to an elocutionist."

3. *Relations of Clothing to Body-Temperature.* The third group of habilitory influences concerns body-temperature. Man is a "warm-blooded" (homothermous) animal and his success in living well is dependent on his maintenance of a fairly uniform temperature. People who have the intelligence (and the good-fortune) to avoid infectious diseases, may go through an ordinary life with no more variation than two or three Fahrenheit degrees during their whole time. On the other hand, a frog, (if we could think of his mind being deranged!) might have a variation of sixty degrees in the course of the six months between the end of January and the first of August. Like the other mammals and birds, we, then, are "warm-blooded," and have a very elaborate and competent apparatus for maintaining a relatively constant temperature whatever be the environmental conditions, or the (normal) balancing of energies and calories in and out of the organism. If this wondrous thermotactic mechanism be deranged, we have "fever"—or else "collapse." For the detail one must consult a treatise on physiology or on the applied physiology of exercise. Now with this thermotaxis our clothing has a great deal to do. In the first place, there is

A, *The Texture* of clothes. The base-idea here is that it is the layer of evaporating dead air next to the skin which makes us sometimes so uncomfortable. Anything, then, including a type of clothing, which will relatively prevent a layer of dead air from forming against the body will tend to keep us cool in summer, and, on the other hand, make us warm in winter. If anything will keep us cool in a warm environment it is the evaporation of sweat,—anything, that is, short of actual immersion in cool water, or in a rapidly evaporating breeze. The texture is the most important factor of this matter,—whether it be a close weave or a tight weave of modern loomwork.

B, *The Material* of clothes. Fur is warmer than wool, and wool than silk, and silk than cotton, and cotton than linen, and linen than darkness or just skin simply because, in the order

mentioned, they retain a layer of "dead," non-conducting, air next to the living body. The material of clothes comes in very importantly then in that familiar way.

C, *The Color* of clothes. This is almost an art by itself in the attire of women. The basic principle in relation to the body-temperature, of course, is that white reflects the warming light and therefore is cool; and black is usually "warm," remember. White reflects and black absorbs the radiant energy—all understand that trite matter perfectly, and it need only be mentioned.

On the other hand, red excites, and thus warms. Red and all the bright colors excite, even green. Blue is the least exciting. Colors exert more influence on observers than they do on the individual. Black, on the other hand, depresses both wearer (by suggestion?) and observer; and yet somehow it seems for general use the most suitable color for dignified, responsible men and women. Many women look far less charming in any other color. Would that more of them effectively realized this fact!

The *mental* influence of the colors of clothes, in men as well as in women, have been more or less well worked out, but not yet in a psychological laboratory. It is obviously true, in the case of women especially, that there is no assignable limit to the mental influence of gowns, and of their gowns' colors in particular, on their emotional state of mind. Human dignity is often scared away by woman's fine and fashionable raiment; and nowadays a true gentleman of good taste is seldom seen in "colors." But it is, after all, only a matter of ephemeral "style," because up to a century ago the best of men wore the most vivid colors that could be made by fabric-dyes; and gloried in them, apparently.

Dinginess of color especially is not worthy, and therefore is of practical importance. Whether this dinginess come from the fading of dyes, especially "cheap" black, or whether it be an original, intended dinginess, dinginess is of considerable importance. This is not only because it can be seen further than any other common defect in clothes, but because it is a primary, conventional sign of the "hobo," of the tramp, the consistently "unsuccessful" man, of the "down-and-outer." It comes next

to patches, "shreds and patches," as a sign of old clothes and of unsuccess. It is the first step toward structural and mental shoddiness, as all are aware. Dinginess shows a lack of proper color-appreciation when dingy clothes are bought new. Color has self-respect as well as other things have, and clothes-dinginess is a lack of color-self-respect,—as much so as habilitory color-saturation.

I had a little discussion last spring with one of my publisher-firms. I objected to the dingy color in which they had clothed one of my books,—a sort of "dirty" olive-brown; psychologically, no color at all. The head of the publishing firm wrote back that in their long experience the cover-color of a book seemed to have nothing whatever to do with its popularity or sale. I "put that proposition up" to another large publisher and he disagreed flatly, and said that from *his* wide experience they had learned that the color of a book has a great deal to do with its sale. The latter gentleman undoubtedly is right in the long run. Psychologically it could not be otherwise. The same principle exactly applies to the dinginess and other color-disagreeableness (dirtiness, for example) of clothing and still more importantly, although sale is not supposed here at present to be concerned. Yet a feminine gaudy dresser proves inevitably thereby her lack of womanly dignity, or else her racial lack of taste-restraint.

About the patterns of fabrics, I am not so certain. Of course, this too is a textile art in itself. Stripes and checks and diagonals and dots are all very important. Their psychology, however, is very complex, and it were wholly unscientific and therefore wholly unjustifiable to say very much about this matter until it has been worked out practically in some adequate psychological laboratory.

Obviously, dots strike or at least pepper one in the face. We do not need to be reminded that dots, large or small, (unless they are so small that you can't see them) are bad taste. But stripes, all manner of stripes, have an inconsistency, so far as their clothing-psychology is concerned. As I have found by inquiring of women, when the stripes run up and down they are generally supposed to make the individual seem taller. Based on



experience, not on psychology, it has always been the tailor's theory that "a very tall man should never wear stripes."

One finds in almost any elementary text-book of psychology, however, two squares of exactly the same height, one of them filled with horizontal lines and the other vacant or filled with vertical lines. If one did not know that it was intended as an illusion, invariably he would be sure that the square with the horizontal lines was taller than the other. Invariably one would think that, and yet when he runs his eye along the tops of both, he finds that they are absolutely the same height. Here is an inconsistency between tradition and fact that I have not yet had time to "figure out," but scientifically it has some interest: Women assert very seriously that horizontal stripes make them look short and "dumpy," and yet, as a matter of pure psychology, horizontal stripes make a square appear taller. I suspect that other essential factors, some recondite, enter the costume-problem that are wholly lacking to the drawn squares. Suggestion probably is one of these other factors, from deep in the traditional subconscious feminine mind. But perhaps habitatory horizontal stripes make their wearers seem to them wider and so proportionally shorter, because the critical women observers look so hard and vigorously along the odious stripes that the exaggerated kinesthesia quite overwhelms the more accurate comprehension of the retinal proper,—psychology familiar enough. However, the matter is one of relatively small account, stripes now being uncommon and out of style heaven be thanked!, even in the prisons since Thomas Mott Osborne and others have shown us anew their inherent criminality to their victims. Later on, when these jail-stripes have wholly gone and been forgot, stripes will doubtless become fashionable for less blameworthy, but freer women and men—for it is just this kind of suggestion among others, which determines, or helps to do so, widespread and relatively long-enduring modes, as has been seen over and over again.

III. SOME APPLIED PSYCHOLOGY

We come now to the more purely psychological aspects of clothes-science so far as I have been able to dig them out from the concatenated nature of our pragmatic personalities. Quite plainly, the expensive research required to adequately develop to its inductive ideal the science of raiment is at present wholly inexpedient, but it is to be anticipated that the extensive makers of clothing and of gowns will be eager to finance this scientific undertaking when its interest and practical human and economic importance have been appreciated.

The psychology of the ever-changing *mode* has been somewhat adequately studied, and hundreds of volumes, probably, have been printed to set forth the dramatic history of costume and its substitutes among mankind of both cultured and savage races of men. Some of these are folios and beautifully illustrated; some are in Latin, and deal with the efficient clothing of the ancients, especially the Greeks; some cover the entire human range from the savage up to the date of composition. Most of these histories of costume are national in their scope and show how intimately clothes and racial history are interwoven. Perhaps the most important of the American treatises is that of Alice Morse Earle dead all too early, who has done very much for American patriotism.

So far as the writer has been able to learn, G. Stanley Hall, keen biopsychologist, was in 1905 the first to approach the psychology of clothing in a sociological questionnaire, summarized and somewhat oriented and discussed by L. W. Flaccus in 1906 (see list of references at the end). This paper is entitled "Remarks on the Psychology of Clothes," a name commendably modest but on the whole just. The conclusions are various, and for the most part suggest the consensus of the remarks which one any day may hear from a group of women (or from some types of men) when talking about their costume. The questions

employed were grouped under fifteen heads, and run as follows:

- here* "1, How does a sense of being well dressed or the opposite affect you? How are you affected by shabby or illfitting gloves or shoes? 2, Do you feel a change in your personality, and if so describe it, from being (a) in conventional evening dress (b) in an outing costume which gives unwonted freedom of action? 3, Do the materials of your dress affect your feeling, i.e., whether they are filmy soft stuffs or stiffer and more unwielding materials? Do you like the rustle of silks? Does the wearing of fur have any special effect upon your mental state? Does the character of your hat? Do you like to wear a train? Why? 4, How does the presence of some defect in your clothing, which may not be obvious to others, affect you? Are you conscious of a difference in feeling due to fresh, dainty underwear, irrespective of external dress? 5, Are you particular about the fit of your clothes or to have them of the latest style? Have you special preferences for certain articles of clothes, e.g., hats, lace, jewelry, fine gloves or shoes, handkerchiefs, pins, neckties, etc., so that any extravagance in dress is apt to be in that direction? 6, What is your feeling toward imitation lace, jewelry, etc.? 7, What proportion of one's total personal expenditure do you think should be devoted to clothes? 8, Children usually like to "dress up." Did you do this when a child and in what lay the enjoyment of it? As a child were you particularly conscious of your clothes, and to what influence would you attribute this? 9, How are you impressed by the dress of others? Does it affect your estimate of a person and if so in what ways? 10, What individual tastes and preferences do you sometimes indulge that are at variance with fashion? 11, What can you suggest about the care of clothes and its educative value? 12, What do you deem important in the care of nails, dressing the hair, cosmetics, face-washing, etc.? Can cleanliness be excessive, and what about exposure of certain parts of the body, both in society and to sun and air in summer—going barefoot, gloved, bareheaded, etc.? 13, What reforms in the dress of men, women, and children would you suggest, and what about too much or too little clothing? 14, What about ornaments and adorn-

ments generally? 15, Say something about canes, parasols and fans, and also state any experience with masks, masquerades, theatrical costumes; the *lies* of clothing, e.g., padding of all kinds, fits, pinchings, tight fits, and loose flowing raiments, and what changes are natural at different ages and periods of life?"

One hundred and eighty-one sets of answers came to these questions from a normal school in New York State, the sex of the writers not being stated. "Because of the very limited number of answers," says Flaccus, "little would be gained by working up the material in percentage form," but he points out some of the interesting types of answers and some individual replies, after he has arranged them in three groups: "1, minor and incidental matters, psychological tidbits, etc.; 2, changes of feeling, fluctuations and changes in personality, differences in feeling-tone, diffusive and expensive effects; and 3, effects on the self as a social reflex phenomenon."

Little is to be found in the answers discussed concerning the physiological psychology of clothing, but what there is undoubtedly corroborates Lotze's keen hints, already related above. Little, too, is to be found in Flaccus's report concerning the interrelations of our clothes and our *cenesthesia*, basis in a way and in a degree of our behaviour and a continual influence over our wills, especially when unrealized and therefore unopposed by conscious effort. Clothes in several important respects are the frontier of our environment; but no less are they powerful determinants of our own inner consciousness. It is here, and in the raiment's direct relationships to our ejective, social environment, that lies the future applied psychology of clothing whenever facilities shall be afforded toward the unravelling of the numerous problems which President Hall's questions so interestingly suggests.

Please remember that the mental influences and the practical relations of clothes, in all their complexity and force, begin at birth, nowadays, even in state wards and in some institutions for children. The influence then received always is lifelong; it is absorbed with the mother's milk, so to say; in the home it has strong motor emotional tones from the first. Quakers are a

noteworthy exception to this rule; they have it as one of their fundamental tenets and attentions that they will not pay any attention to clothes, and relatively to most others they have always succeeded, and doubtless will continue to do so. And the convict's extreme interest in his shameful clothing is happily now a thing of the past, or as obsolescent as the lash.

But interest in clothes, verging into vanity, comes in our ordinary life from the very "first" day, and maternally long before. That is one of the reasons, scientifically, why it is impressed so deeply and so emotionally on the dynamic subconscious mind of young people in general. The children who are not by their own initiative victims of too much clothes-consciousness usually feel it and hear about it in others, and so the effect is about the same. Clothes-consciousness is relatively insignificant in childhood, notwithstanding all this influence. The exceptions are a certain "type" of little girls.

This consciousness so far as it relates to the inessentials of the art of dressing, leading through habit to personal vanity and sundry kinds of fixed ideas, is of course an evil thing for the child, for it narrows her interests and tends to wrong the growing ideals of personal beauty which are at heart properly anatomic and physiologic.

On the other hand, rightly directed, dress-consciousness becomes but a part of that universal awareness of body, which elsewhere* I have already praised as an universal cenesthesia,—the only firm foundation for that self-knowledge on which valid education and efficient worthy living possibly can be based.

But in either of these two cases, the clothes-consciousness of the child, even if it be mostly negative, a negation of the desire, constitutes the firm and life-lasting foundation for the phenomena of clothes-psychology which begins to be so conspicuous with the florescence of the personality at puberty:

In the more physiologic part of our discussion we have seen that clothes serve sundry protections, just as the skin does: the "box-coat" of the tortoise, the quills of the hedgehog, the feathers of the robin, the armor of the sturgeon, the colors of the

* *The Mother's Magazine*—eight articles on habit and on early sense-training, 1917-1919.

flounder, are all examples of clothes, we might say, in the lower animals, which serve as protection, very important, indeed quite indispensable protection, of various mechanical and physical kinds, giving them more freedom. And I tried to make it understood that especially *freedom* is served by our own armor, our clothing; freedom from various things which are various forms, in short, of fear. We may note without danger of being successfully contradicted, that clothing at one time or another, in some people if not in others, protects us against fear: *fear*

1, of ridicule; 2, of the estimation of poverty; 3, of the estimation of inefficiency or stupidity; 4, of numerous dermal discomforts; 5, of bodily internal discomforts; 6, of the estimation of bodily immodesty; 7, of anxiety; 8, of the estimation of a lack of self-respect; 9, of the estimation of a lack of good taste; 10, of obtrusiveness; 11, of an under-estimation (real) at "first impressions"; 12, fear of the estimation of homeliness or lack of the desired beauty.

Many of these fears, it is obviously true, are subconscious. It is not easy, however, to believe that clothes could mean so immensely much to so many people, unless underlying its applied psychology were some emotionality which takes a tensely gripping hold on the deeper being of the individual. For instance, snobbery is not valid. Emotions other than fear, (notably vanity, modesty) affect the wearer of clothes in any social environment, but I believe that the moving emotion, the actuation, is fear more often than any other; and at heart always self-protection.

Fear certainly mostly underlies the psychology of clothing as it does the psychology of other important features of our common social life. I should like, if it were necessary?, to enlarge on this super-importance of fear generally in our daily life, for there is no one thing in this astounding world that the vast majority of children and of men and of women need to be relieved of more than of the various kinds of dread, worry, and fear. Fear is one of the very worst enemies of our race's civilization as well as of our personal comfort and moreover of our efficiency. Why fear (as Morton Prince has shown), has made the

megalo-maniac Wilhelm II into a beast—fear of losing his anachronic “job.” But really nowadays one does not need to enlarge upon this matter, for the whole consistent trend of modern psycho-therapeutics, of “Christian Science,” and of all the other aspects of mental influence, is striving its best to coax or to drive fears of various kinds out of people’s minds. And the most important aspect of fear, of course, is worry, a chronic, but a none the less harmfully powerful, form of fear.

Protection and relief, then, from such fears, in addition to those that I have already mentioned of a more physiological nature, I take to be *la raison d’être*, the real aim and purpose, of the wearing of clothes. And that is of importance.

Now, fear is so instinctively and yet so unpleasant a part of each unique conscious individual, that relief from it in all its phases often is a positive and a lasting joy. I wish to call especial attention to this familiar proposition, that to be relieved of fears of various kinds is not only a negative thing but sometimes in some natures a source of *positive satisfaction*, of conscious delight and contentment. My hemobarograms show this. Then add vanity; self-confidence; pleasant anticipation; satisfactions with oneself; and other emotions; and we have the strong, pleasant emotional tone which lends to some persons the tremendous energy and “pep,” so to say, the *desire*, always to be “well dressed.” But as we have seen, after due consideration, the essence of the psychology of being well-dressed seems to be statable scientifically as preponderantly *a relief and protection from various kinds of fears*.

Clothes-fear is none the less powerful and effective as a motive because often subconscious. Sometimes the individual is wholly unaware of it, but on that account it is none the less cogent and practically important. Fear, obviously, of this kind, relating to being not well-dressed, is more subconscious in men and boys than in girls and women. That is to say, most women have more consciousness of being ill-dressed or well dressed than have men. It is part of their blessed nature, and rightly so. The vast biological purpose and use of the desire to be beautiful, and even self-assertive, on the part of the female is plain to all, but worth

noting, and withal worthy, too. The same conditions obtain in the male, but in a far less degree of consciousness and of inconsistency and of importance. Perhaps in many self-reliant men it exists in too small a degree; many men after thirty years need in some way to be aroused to pay more attention than a great many of them pay to their personal appearance and success-index so far as clothes are concerned. And so too they would attract womanly young women of sense more certainly yet, frequently to the common benefit.

Those who have been brought up in university communities have occasionally seen men, often philosophers in the philosophic departments, or deans of colleges, who would disregard this whole matter. Diogenes, or Cleanthes? None the less, a large majority, of course, even of academic people and of "book-worms," pay due attention nowadays to this matter.

Being well-dressed, then, is part of the essential ratio between happiness and personal ability and efficiency which I am continually trying to emphasize. The practical value of contentment, indeed the whole matter of contentment and of physiological self-satisfaction, are worthy of notice. Fear, conscious or subconscious, ordinarily maintains, even at great and varied cost, this contentment, and at times almost instinctively. Contentment, rational self-satisfaction, has its roots extended into nearly everything in life.

It is related, for example, very closely to love. In a recent novel ("Troubled Tranton") by W. E. Norris, published in 1916, in England please observe, purely by chance I find this statement:

"—she had really loved him almost from the very beginning.

From the very beginning, at all events, she had had a feeling about him that she had never had about anybody in the world before.

Asked what sort of a feeling, she replied: 'The sort of feeling that one gets when one's clothes fit absolutely. It's a rich and rare sensation, but you wouldn't understand it, I suppose.'

He understood well enough to be wildly exultant, and for a minute or two, as eloquent . . .," etc., etc., etc.

This is a rather striking illustration to come from a novel writ-

ten by an English literary observer and therefore really a "knock," quite unscientific but certainly timely, on the highly commendable lack of tightness in the average tailor-made clothes of English men and women. This recalls in like manner the feelings of the fine lady of intelligence who assured Herbert Spencer, as his diary tells, that the consciousness of being perfectly well dressed gave her "a peace such as religion cannot give" (E. A. Ross).

And comfort, I have tried to show, is indispensable to a high efficiency, and I must not allow you to forget or to mistake that point. It isn't merely a matter of creature-comfort, but it is a matter of efficiency as well, and efficiency both physical and mental.

Fitness. "The sort of feeling that one gets when one's clothes fit absolutely," as Norris puts it, (and he is a close observer and withal a *man*) comes only from "fit"ness, from an absolute fit, not tightness. We need next see what that means, as applied to clothing, for the term might easily mislead. To me, two criteria are essential, one of a general and the other of a particular nature. First, a uniform snugness with a reasonable amount of looseness for the organism as a conscious and living and variously active "machine" with vital and mental processes to carry on, within the clothes. We have already discussed this matter of body-fit and how it is compatible with a uniform looseness.

Second, fitness to each unique *individuality*. As has been pointed out, fit appears to be very well brought about in a fitting of clothes-types. At least ninety-nine out of every hundred not-deformed men could be fitted by a reasonable number of well-developed factory-types of clothes, and I believe better than the *average* custom tailor would accomplish it for each unique individual. There is a relative fitness for his clothing, (uniform snugness so far as compatible with an equally uniform looseness!); general appropriateness; above all, appropriateness to the personality; and this usually (see below) involves a relative

Unobtrusiveness. Indeed that is the next point I wish to emphasize. An essential thing about a well-fitting suit of clothes (remember we are not talking solely about the body any more,

for clothing must fit the dual, the multiple, personality), an important element of fitting a personality, is that it must be unobtrusive. That is my idea of a well-fitting suit of clothes: one which fits and is unobtrusive.

Obtrusiveness. Of course there are exceptional people in whom obtrusiveness is a necessity made a virtue. The clergyman, the detective, for example, the prostitute (see Robert in our little bibliography), the hospital-doctor, the "sport," the politician, the butler, the army-general, the nursery-maid, the policeman, and a great many others, all wear clothes which should be obtrusive; their clothes' business is to be so. The widow wears her sombre-colored clothing, the sport his flashy checks, the cruel "Boches" their pointed helmets. The cassock of the priest; the ultratightness of the clothes of the dude; the mere startling surprises of the female fishers of men (whether as husbands or lovers or both)—all such are a variety of "sandwich-men" with their business glaring front and back.

Self-confidence is another form or aspect of the essential satisfaction arising from clothing-fitness. Protected, fearless initiative; unirritated, mind-free, normal manhood and womanhood, confident of its eternal and universal mastery, arise from rational self-satisfaction. Clothes help this in no small degree,—or hinder it. "Success" has as one of its conditions a self-confidence, a fearlessness, and success in general usually is not probable without that self-confidence, this eye-to-eye fearlessness of general criticism.

Several writers, for examples H. Addington Bruce, the well-known psychologic writer, and Bruce Barton, recently have called popular attention to this very practical relationship between success and self-confidence and wellfitting clothes. "*Success*" and clothing are inter-related.

Adequate clothing and success. From my 1917 summer-school class in psychology at Harvard, men and women, twenty-four of them, averaging twenty-eight years in age, there are answers to the general question, Why are "success" and clothing inter-related? There are seventy-eight answers, made up of thirteen different reasons; the replies were written out carefully, but

spontaneously. (This summary of these reasons was kindly made for me by Miss Winifred D. Muhs of the Chicago Public Schools and two of her friends, to whom I extend my compliments and thanks.)

✓ A well-dressed person more easily gains the confidence of people in the business world. *Fifteen* answers said practically that.

Consciousness of good personal appearance frees the individual from the fear of the most common form of adverse criticism. *Fifteen* also said practically that.

✓ The personality of an individual is judged, first of all, by his external appearance. (That is absolutely inevitable.) *Eight* replied thus.

✓ Those habitually well-groomed carry that neatness to things beyond clothing. (It suggests a neatness which is sure to be applied to other things.) *Seven* said this.

✓ Social advantages are frequently obtained as the result of pleasing personal appearance. *Six* gave this reply, in substance.

✗ First impressions are lasting with many individuals. *Five* suggested this.

✗ The appearance of having money carries with it the impression of the power to make money. *Five* said so.

✓ To see an individual well-dressed produces a pleasurable sensation in others and puts them in a favorable mental attitude toward the individual. (Empathy.) *Five* answered thus.

✓ Being well-dressed has an unconscious effect on the carriage of the individual, and conversely a good carriage promotes a desire for good clothing. *Three* said this.

Being well-dressed has an effect upon the emotions of the individual, such as joy, ecstasy, etc. *Three* answers.

✓ Clothing often reflects the habits of living, such as home influences. *Two* suggested this.

Being well-dressed requires a certain amount of cleanliness, therefore is hygienically worth while. *Two* gave this idea in answer.

Half the world is being bluffed by the other half; dressing well helps your bluff. *Two* answered in that way, both of them men.

Miss Muhs almost summarized the whole matter, and especially well from a feminine viewpoint, by one of her own answers: "*If you feel right, you can get good results.*" Two implications come from this intuition, both good clothes-psychology: If you are well-dressed you will "feel right"; and "success" depends on getting "good results." The conclusion is various, but interesting.

Now those are answers to the question as to how "success" is aided by clothes, from young men and women, mostly teachers. They probably represent the unbiased opinions of people who have no immediate special concern with clothes in any way, aside from what every one (hereabouts) has.

Appearances, remember if you please, may rise far above the reality. One's clothes may be far better than his soul, his mentality, his body, or his bank-account. But none the less, till every lass and madam and "man Jack" is a philosopher, and a Stoic philosopher at that, the wise man in an average-social community will not ignore appearances,—unless, at least, he be well fixed above that community.

It is certain that the philosopher, even the amateur philosopher, can rise above his clothing. It is still more certain that philosophers (Zenos and such) are scarce, not to say rare and obsolescent and very nearly extinct, so far as practical affairs are concerned. One sees them oftenest perhaps in the modern representatives of the secular hermits, the men who live secluded lives more or less *alone*, and therefore tend to lose the clothes-consciousness with the clothes-fears and the need of protection. This relation of adequate personality-fit of one's apparel to his "success" from the "low world's level stand," involves many principles of human nature and of human personal and social motivity. They will gradually be worked out, but not here.

First appearances and "success." For any who doubts that clothing is related to "success," I report some typical and actual cases. I asked the members of one of my classes to recount actual personal or observed experiences in which the being well-dressed was of actual benefit, actual aid or the contrary, to success. I venture more or less exactly to transcribe a few of these instances from "real life":

A young woman: "I was to have an interview in — in reference to a position as instructor in a settlement-work home there. I wore plain tailor-made clothes. The lady was evidently impressed by my appearance. She had never seen me before, but before leaving for Boston, she offered me the position as "director" in the institution, and writing to me afterward, said: 'Your tailor-made appearance as you stepped from the train made more than a pleasing first impression; it was indeed a striking one,' etc., etc."

Here is another: "I know two young men, one in particular, who is not at all sincere in any work, who is always losing his positions but who always obtains good ones. He ever makes it a point to be well-dressed and groomed when seeking interviews, and his dress and pleasing manner always 'land' him a place."

Another one: "The experience I had was in applying for positions and in that I heard that, on account of my being well-dressed as it was termed, meaning by that a medium apparel, tailored, not extravagant, nor yet slack. The Faculty and Board thought the influence I might have on high-school girls to do away with the present-day foolish desire for display would be as great as the physical training. Impressions made on first appearance are often very lasting and very important for the applicant. If one is careful about appearances, employers can nearly always be sure their work will have the same care by their employees. Clean-cut people are always the winners and nearly always demand attention of others."

Here is another: "I recall a teacher who, though she paid high prices for the articles of clothing that she wore, but who did not dress well, tasty and neatly, was without a position for a number of years."

Another: "A teacher applying at the — Agency in person was so suitably dressed and harmoniously with her own personality, that she was offered the position on the spot, apparently regardless of recommendations, etc., by the Superintendent who happened to be watching."

Another one: "My brother in 1911 secured a position with

an electrical company in competition with six other men who were graduates of the same institution as he. The manager afterward told him that he was chosen for several reasons, one of which was the fact that his personal appearance, clothes, and general make-up were more pleasing than that of the other men."

Another: "Two years ago I was asked to make personal application for a teaching position. I considered that my obtaining the position was partly due to the fact that I was well-dressed. My suit was smart and becoming in color. All accessories were in excellent taste and the whole effect was good. I am sure my appearance impressed the Superintendent, for he asked me very few questions regarding my previous experience or present qualifications, but hired me almost on the spot. I know that I was never less self-conscious nor more sure of myself."

"As a child of nine years," says one, "our teacher always chose the best-dressed pupil to run her errands to other rooms in the building. In those days little girls wore aprons but there was one among us who wore fancy dresses and bobbing curls." She was usually the favored one "except where some of us would appear for the first time in a new dress—not covered by an apron. I did not realize the significance of the attractive dress until a few years later."

Another: "In Kansas the Board of Education depends a great deal on personal appearance in selecting their teachers. They must all visit the town, and as good clothes cover a great many faults—if they make an imposing appearance they are generally taken on that basis alone. They want a model for the pupils and I have known them to turn away a woman with a sloppy appearance."

Another: "Saw an experience in an employment-bureau some years ago while in town. There was a large number of applicants of various stages of prosperity, judging by clothes and general appearance. The proprietor or manager singled out a young man of about 20 years of age, because he was well groomed in personal appearance and his clothes looked clean and well cared for. There was no other reason to choose him first from the waiting crowds except his general appearance of personal care."

Here is the case (of almost historic interest in Boston and in New Hampshire) given in "Every Week" by H. Addington Bruce, in September, 1916.

"A good many years ago there arrived in Boston a young man whose total capital to begin business life was less than five dollars. Naturally, this did not carry him far; but it did carry him to a position as oyster-opener in a little all-night restaurant. Here he made the acquaintance of a 'night hawk' cab-driver, who became very friendly with him and promised that he would 'tip him off' to a better paying place at the first opportunity.

One night the friendly cabby gave him the news he had been anxiously awaiting.

'I've got another job for you,' he announced. 'They want a man behind the bar at a hotel where I have lots of friends. The job is yours for the asking.' And he named one of Boston's leading hotels.

The young oyster-opener handed in his resignation, and hurried around to the hotel. The hotel manager, after one cold, appraising glance, curtly told him:

'I've got nothing for you. Yes, a man was wanted; but we don't want anybody now.'

It took the over-confident young man nearly a month to get back his too hastily resigned place in the restaurant. Meantime, if hungry and homeless, he used his eyes and ears and his mind to good advantage. Accordingly, when the cab driver a little later informed him again that a man was wanted at the hotel where he had already applied vainly, he did not rashly resign the place he held. Instead, he asked for a night off, and hunted up an acquaintance, a man of about his own build, but more prosperous.

'Jack,' he said, 'I want you to lend me your Sunday clothes, walking-stick and all.'

Next morning, after a good night's sleep, well shaved, and dressed better than he had ever been before, he called once more on the hotel manager. The latter, needless to say, did not recognize him.

Politely he inquired what he could do for the well dressed

stranger, listened attentively to his application, and expressed regret that he had nothing suitable to offer him.

'But,' persisted the applicant, 'I understand that you want a man behind the bar.'

'That is true. But it is not a place that would suit you. What we want is a man to clean glasses and get rid of empty bottles.'

'I'll take that place. When shall I begin work?'

This, I say, happened in Boston a good many years ago. As time passed, the young man prospered until long before his death, he was the owner of several big hotels. One of these was the very hotel where he had begun work as a glass-washer. You may be sure he never forgot that he owed his start in the hotel business to the wearing of a good—if borrowed—suit of clothes."

Many of my readers have seen and enjoyed the clever and interesting comedy, "*The Tailor-made Man*," developed by Harry James Smith out of Gabriel Dregley's "*The Well-Fitting Dress-Coat*," and ably staged by Cohan and Harris. The cost of seeing it in money, bother, and time is a capital investment not only in delight, but in applied psychology as well.

Just usefully to exemplify the important scientific principle that there are two sides to everything (unless it be a mother or a geometrical point) we may quote the only expression of doubt offered by my students. (Several others said they had had no experience of relation between clothing and success.): "I don't know personally of any case at all where the clothes have been the cause of a person's success.—It's usually the personality of the person that gets them by. I happen to know of one man who came up to Harvard from somewhere down South. He was about as poor as a church-mouse and if personal appearance had had anything to do with it, he wouldn't have gotten very far. His college life was successful—won scholarships and all sorts of things for his work. Also a very successful position in a law office. But I would call it ambition, personality and stick-to-it-tiveness, not clothes." It may not be wholly unscientific to suggest the conjecture that the clothes of this Harvard man "from somewhere down South" were a not inconspicuous and successful factor in that personality, which according even to

the second and more immediate summer Harvard-man is what "gets them by,"—whatever that may mean for psychology.

Now those are actual illustrations which may serve as well as many more from any number that might be obtained, to emphasize that, in the estimation of most people, to be well-dressed is a distinct aid even to practical dollar-and-cent success. For a wider and deeper personality and its better values, nothing further need be said, for all recognize freely the meaning of the pragmatic "me."

First impressions really are of great practical importance because as "beginning stimuli," sudden excitation, they impress the mind very strongly, and then through continuous action of the subconscious gain permanent influence. Physiologically, we have here a contrast-effect, a change, and a sudden one, in the environment (Verworn). We have the vigorous impression that comes from something wholly new and perhaps striking, striking certainly in the sense that it is the first impression obtained of that individual, making the base-neurogram in the cortex. Perhaps this is stronger, the first impression, in women-observers than in men. Perhaps in them, too, it is more intuitive and more emotional.

Therefore is it that wives and sweethearts are the proper chaperons of men when they go to buy their clothes, whether made or to be made. This is something that perhaps is well worth consideration: that women in general are very much better judges of well-dressed men than men are,—than they themselves, the buyers, are. And if the industrial side could in some way educate men actually to trust to their wives and sisters and sweethearts and mothers or even aunts, as to when their suit is fitting or not—*fitting* to the personality, remember, not to their body only,—it would be a distinct advantage in the securing of satisfied customers, and thereby of a better-dressed public. A woman is the ideal arbiter of manly clothing.

Most women have distinctly a faculty of "sizing-up" an appearance, especially of a man, which rests on their intuitive faculty, a power which in its quick and subconscious form men for the most part lack. Men are reasoning creatures, but women

can go through the reasoning process (as I have recently pointed out* anew), only they do it very quickly sometimes, and instinctively; but regularly it is just as accurate a product, and oftentimes far more so, than that which the man slowly could work out by that which we call reasoning.

Uniformity, save of uniforms, is a crying wrong in general in our system of dress, but it is less true of women perhaps than of men. Among the more indigent people (with an apology to Kipling), we may say:

"They are like as a row of pins,
For the Colonel's lady an' Judy O'Grady
Are sisters [over] their skins,"

as well as "under." There might and should be far more personal latitude given to clothes. Instead, there is slavery to set styles, partly because of extensive factory manufacture and partly for the very different reason of adherence to the very latest mode.

Dress-making is a typically feminine high-accomplishment; and properly speaking, as a matter of theory, each womanly woman might well make her own gowns and accessories, thus giving them a personality-fit in its logical limit of perfection; an uniqueness exalting to the unique personality making and wearing the clothes.

As I see it, the "house" that provides the men's clothing that will best fit the vast majority of personalities, in the long run is going to get more than its proportion of the business. On the other hand, the unobtrusiveness which is so essential in a well-dressed man and woman is sure to be lacking in a general servility to style and fashion. On the third hand, again, over-uniformity is sure to lessen the individuality in more important respects than clothing suggests, often, however, at a great common benefit.

Uniforms in general for soldiers, policemen, firemen, sailors, etc., are clearly much more than a symbol of the quite indispensable esprit de corps. The uniforms one might almost say ex-

* "Intuition," *Psychol. Review*, XXIII, 6, Nov., 1916, pp. 465-483.

press the esprit de corps; they certainly preserve it. One cannot imagine an army, in these days, at least, (but recall the "Minute-Men"!) that didn't wear uniforms. The clothes of the private individual should be unobtrusive but should not be uniform, just as the individuality is sacred beyond any greater "unit," because every conceivable such unit exists only for the furtherance of the individual; on no other base can Democracy, the Vast Cry of this urgent period, stand and endure.

Evening-dress in the case of men is essentially uniform, and a uniform, although made of broadcloth instead of olive-drab cloth. As such, the wearing of it tends, and to a degree often noticeable, to merge the personality of the real man in a kind of unreal snobbery and pretense of class or group, in this case "fashionables" or would-be-fashionables. Present evening male dress therefore is condemnable not only for its somberness and supposed stiffness and (frequently) tightness, but because of this unscientific uniformity which makes for impersonality precisely when the one thing important beyond all else is unique personality, the *man*. He is something usually worth while when encouraged to be in each case his own self rather than a fashionable in fashion's uniform. Better the mess-house garb in the lumber-camps of Newfoundland! Personality is there.

The all-pervasive Burton's "Anatomy of Melancholy," antique store of erratic wisdom, 1652, observes, ". . . now most men are esteemed according to their clothes. In our gullish times, [Cf. 1918] whom you peradventure in modesty would give place to, as being deceived by his habit, and presuming him some great worshipful man, believe it; if you shall examine his estate he will likely be proved a serving man of no great note, my lady's tailor, his lordship's barber, or some such gull, a Fastidius Brisk, Sir Petronel Flash, a mere outside. Only this respect is given him, that wheresoever he comes, he may call for what he will, and take place by reason his outward habit." And certainly is this last statement true in 1918 as in 1650 to a degree not supremely complimentary to the sincerity and ideals of human nature. First impressions prevail. And Burton again, but in regard to women's dress this time, quoting from Ovid:

"Auferimur cultu, et gemmis auroque teguntur
Omnia; pars minima est ipsa puella sui."

It would be interesting to hear old Ovid's opinion of some of our contemporaries who have developed camouflage (not to say plain padding), apparently to its somatic, if not to its logical, limit, yet moderated in essential details since a century ago, even if developed in other respects.

Deceits in clothes (aside from the adulteration or the substitution of their materials) have been numerous and are in some ways of much interest. Padding is an old aspect of it and usually has as its aim (save in deformities) apparently, the heightening of sexual attractiveness; one thinks of the broadened coat-shoulders of the male as quickly as of the bust-extend-ers of the female or of her hip-pads.

A peculiarly subtle sexual camouflage that I have recently noticed is a complete set of unbuttonable buttons and button-holes down the front of a silk shirt-waist, the garment being properly closed by concealed means beneath. The psychology involved in such a device for producing situations suggests beautifully how the science is permeating even the most commercial phases of society!

But the deceits of clothing would require a monograph for themselves to be adequately set forth and analyzed.

The really well-dressed persons in general wear clothes which are not easily differentiated from the rest of their personality at all. Indeed, philosophically speaking, one's selfness includes all of his relationships. If you please, this is a matter of good philosophy, not merely a matter of hearsay, that a man's personality is absolutely all of that man's relationships, what James pointed out as the pragmatic Me. The psychology of clothing emphasizes it, as it is not hard to understand. *Naturally*, in a social community a man's clothes are part of his very self. It is a worthy philosophic proposition. Clothes are not something that he puts on and may wholly take off; a parasite that bears no relation to his personality. The clothes a man wears are really part of his personality considered from a common-sense (the pragmatic) point of view. Therefore, they should fit into

it as well as on to it. They should be for whom they are made unobtrusive. They should be part of the individual. And then, properly and socially speaking, they *are* part of him.

Thomas Carlyle in his classic "Sartor Resartus" delineates this symbolic aspect of raiment once for all, but the work as a beautiful whole deals with man, not with man's clothes. But this symbolic aspect of our raiment may not profitably be ignored.

Fine, expensive clothing implies wealth of the wearer or else the having of wealthy friends; and well-fitting clothes in like degree imply taste and culture. Therefore, to the cultured and the wealthy, fine and well-fitting clothing is right and normal. "Costly thy habit as thy purse can buy." By the same token, however, it is a means of pretense to many who are neither cultured nor rich, but who are not positively adverse to being thought either, or even both; hence frequent gross extravagance.

Initiative. The self-respect and self-confidence which seem to be, in fact, (however loath we may be to accept the fact), partly dependent on clothes in some persons, and in some persons largely so dependent,—this self-respect and this self-confidence are intimately part and parcel of the essential *initiative* of every individual. Initiative stands for strong personality. If a man has not self-confidence, he will not have initiative. He will not "start" things; nor keep them going. He will not have that self-confidence which is the necessary preliminary to normal success. He won't try to do things. With self-confidence, he is apt to have a larger amount of initiative. In my deliberate opinion self-confidence for the great mass of men and women is to some extent obviously dependent on being well-dressed. My own introspection when "all dressed up" (and somewhere to go) emphasizes freedom from the obsession of clothing, leaving a chance for untrammelled initiative. The "peace that religion cannot give!"

I have tried to emphasize already and perhaps enough that *self-confidence actually is part of the energy and the efficiency* of the individual. So is this feeling, true or false!, of being of some account in the world and on an equality with the best or

even with the richest! And even if a man is well-known to be indigent, a down-and-outer even, if you will, a rather large per cent of men and women, as a matter of fact, will take the counterfeit at its face value, for snobs are not only snobbish and most despicable, but often shallow and insincere even at that. The snob sees no deeper into a man than his underclothes, at furthest.

For the most part, the "hobo," the truly down-and-outer, does not appear even among snobs well-dressed; and only rarely is the highly "successful," (that is, merely rich) business-man positively ill-dressed however much of a philosopher he may be. For practical business purposes, then, clothing certainly does, as Mr. Hillman says, "proclaim the man." There is no doubt of it, and the numerous exceptions are not relatively numerous, but only seem so because we notice the sartorially exceptional cases and seldom the vast majority of the well-dressed, because, as we have seen in the philosophy of dress, these are unobtrusive.

To young people and to middle-aged people the clothes proclaim the man more exactly, of course, than to elderly people, who, wiser and broader oftentimes, realize how inexpressibly complex are human social nature and human motivity, and so look for more caprice in the matter of clothing than their juniors allow for.

The *discomfort* of ill-fitting clothes may not readily be exaggerated. Personally, although custom tailors have made my clothes since I was fifteen at least, I know that the sum of the clothing discomforts is very considerable, and of very great practical importance; that is, as far as constructive mental efficiency goes, at least. My continual aim, save when in the cold, is to get offending garments *off* as soon and as much as possible. Coat-collars behind may be too high; waist-coats too tight; or too short; trousers too waistly tight; their legs too long; the arm-holes too small; the coat-sleeves too long; and an irregular fitness all over the body. Then add scratchy hard collars and tight shoes and hot hats and squeaky shoes and ephemeral socks and ill-fitting underwear, and it is certain that to a man or woman whose efficiency is closely related to his freedom of mind

and to his relative comfort, the clothing-matter is one of much importance. The multiform discomforts of clothes are an important economic factor, one worth attention from the consistent economist.

Pockets numerous and roomy that may be freely used are noteworthy features in truly comfortable and efficient raiment,—as many officers in Army and Navy service recently have learned through their enforced negation. Few women know what they miss by their stinginess in pocketry.

Purely, of course, as a rough judgment, I believe that the discomforts of people of relatively free efficiency that come from ill-fitting clothes, in various ways, detract very considerably from their *practical* efficiency. As I look back over my work-hours and see how very many of them were disturbed, not to say spoiled, by various kinds of discomforts of ill-fitting clothes, of one kind or another, I judge that on the average, fully ten per cent of inefficiency may come from the lack of proper, that is, primarily, comfortable, clothing. We will now say nothing of the unhappiness itself, although we have an inherent right to contentment,—and to happiness, if we can reach and keep it!

Personal bodily modesty is a clothes-topic whose psychology and sociology scarcely need discussion in our little *Sartor Resartus Dissectus*. It is simple and sad enough: the young women and even the no-longer-young women use their clothing as well as their lack of clothing to advertise their bodies. No one has discussed this more ably, perhaps, than Professor Winfield Scott Hall, well known for his widespread lectures (and booklets) on social hygiene as well as for other important things. He points out that a young woman should use her clothes, if at all, as part of an attractive and love-worthy and marriage-worthy personality,—never in such ways as to advertise her person. This logical and psychological opposition between persons and personality seems to be the keynote of the whole sex-modesty matter in its relation to clothes. (See Havelock Ellis for the anthropology and the psychology of the subject, in the reference-list below.)

The base-principle of this matter is that clothing has created

the concept-feeling complex which we designate as immodesty when used in reference to nudity and to naked human bodies in modest posture. The other base-fact is that clothing can be far more inflammatory than nudity—a clothed body more lascivious than a naked body. "Clothes have made modesty, not modesty clothes." Ellis has made this as plain as it can be.

At the same time, I have long had the impression that one consideration which somewhat opposes this proposition in its bare form has been ignored (or I think so from memory) by Ellis, Hall, etc. Namely, that in some lands at least (notably the Congo—see Cureau's important "Savage Man in Central Africa," recently translated) caresses of all kinds are so frank and so universally common and so much a matter-of-course that bodies of the opposite sex have neither the erethistic strength nor the insistence as stimuli that they have for persons where some degree of restraint is fairly common. Consistent satiety would provide no continuing motive toward the development of either modesty or clothing. And coldness of the climate by itself is reason *enough* for clothing away from the equator; and the heat of the equator reason enough for its absence there. Second Avenue, New York, early in August, 1917, exhibited on its fire-escapes along the elevated railroad as good an illustration as one need have that modesty in the conventional "proper" sense is easily forgot even by people of the highest respectability whenever life and death or even extreme discomfort are involved in being "modest." Like some other things "modesty" either is sometimes superficial or an obsession.

F. Boyle (see reference in the list below) is typical of the few who like to expatiate on the harmfulness of clothes as covering of the body.

The Art of Scientific Appareling. If the corollaries of the foregoing essay into the psychology of clothes and their wearing be not too indefinite for general acceptance (and perhaps they are not), it is clear that there can be no "laws" social and much less official for scientifically clothing the population. In the centuries past, all such attempts (mostly sumptuary) to legislate have been abandoned forthwith, at first *de facto* but

soon *de jure*, as unnatural interference with personalities, whether costermongers or earls. The Quakers have done best in this direction, but only because they have insisted on a relative *negation* of the personal "fit"-ness, adaptation, of their raiment.

It is, then, to the *personal* "laws" or sanctions of scientific appareling that physiopsychology must apply itself. Clearly enough, these sanctions may be as scientific, as detailed, as elaborate, almost as the relations, physical and mental, of the human and his environment.

To be well-clothed, in the sense of this monograph is to have good taste in many things, one of the surest general indices of substantial intelligence; and is to have a good realization not only of the pragmatic Me, (the only kind with two legs to stand on) but of this Me's intricate relations psychical and material with its effective and ever-flowing and ever-changing environment, as intricate qualitatively even as itself. The female (horrid but necessary word!) with her superior intuition will always remain the passed-mistress of this personal art, and science can do much, but always only in an individual case, to suggest the basal sanctions for the guidance of her habitual intelligence.

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Harvard University has more than a hundred volumes on clothes and costume, mostly historical, and classed as works on the fine arts. From these physiology and psychology are practically lacking.

Modern books and articles on hygiene contain some physiological material, but not much.

Altogether, previous to the present discussion, so far as known to the writer only the four pages by Lotze and the questionnaire by G. Stanley Hall, both listed above, contain any physiological psychology of clothing worth the "looking up." But the subject is wide-open for discussion.

